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Part First.

ORIGINAL COMMUNICATIONS.

I.—PRESIDENTIAL ADDRESS DELIVERED BEFORE THE EDINBURGH OBSTETRICAL SOCIETY, 9TH NOVEMBER 1892.

By ALEXANDER RUSSELL SIMPSON, M.D., President of the Royal College of Physicians, and Professor of Midwifery and the Diseases of Women and Children in the University of Edinburgh.

GENTLEMEN,—As we meet to enter on the work of the fifty-fourth session of our Society, we find it our first sad duty to note that one of the most familiar names in Edinburgh obstetrics has fallen from our roll of Fellowship. At the close of last session we paid Dr Alexander Keiller the rare compliment of adding his name to the list of our Honorary Fellows; and we hoped that he might for some length of time wear the honour, so hale and hearty he always looked, and so lightly he seemed to bear the weight of his fourscore years. But a paralytic stroke prostrated him in his seaside home at North Berwick, and though he retained his consciousness for some days, he sank under what his friends took to be a cerebral apoplexy, and died on the 26th of September.

Many of you must have read sympathetically the interesting and adequate sketch of his life-course that has already appeared in the November number of the *Edinburgh Medical Journal.* None the less you will allow me now to indicate a little more fully his relations to our Society and our subject than it was possible for the obituarist to do.

There was a kind of ebb in the activity of the Society the year before Dr Keiller was admitted to its membership. The record of the whole session of 1845-46 only occupies three MS. pages of the Minute-book. The treasurer could report a balance of £40, 2s. 2d. in favour of the Society, in consideration whereof, "it was agreed to call for no annual contribution from members" that year. The records of the six meetings of which the session consisted, and which continued to be held alternately in the houses of the various members, usually tell merely that "the evening was spent in conversation on obstetric subjects," or that "the ordinary business was transacted." Only on the December evening the conversation is reported as taking up "more particularly the subject of the operation for removal of the ovary." That session had already run its course by April. The next did not commence till January 1847. But the tide had now turned. Through the intervention of Dr Graham Weir, the Society gathered in the room in the New Town Dispensary, which was the scene of many an animated discussion, and where the meetings were continued for many years. It was on the 20th of January that the session opened, and the night was made memorable—as may be read in the clear handwriting of Dr Cumming—by Dr Simpson relating the case of a woman he had delivered the previous evening while she was under the influence of sulphuric ether. It was the first intimation of the beneficent idea of the use of anæsthetics in labour. If Dr Keiller was present when he was proposed for membership by Dr Simpson and Dr Cumming at the next meeting, he must have heard his proposer give more full details of that first case, and relate the histories of the others that formed the basis of his earliest experience, and encouraged him to go forward in his anæsthetic researches. Dr Keiller's own earliest contribution to the Society arose from a discussion on the night of his admission on spontaneous evolution, when Dr Martin Barry and others related cases that had come under their observation. In connexion with this Dr Keiller told of a striking instance that had occurred to him when practising in Dundee.

The years of practice in Dundee, I ought perhaps to remark by way of parenthesis, ran from 1837 to 1844, instead of at the later period indicated in the biographical notice. Perhaps his friendship with Sir James Simpson was among the factors that determined his removal from Dundee to the metropolis. He used sometimes at our obstetrical dinners to tell us of their first sight of each other. Keiller and one or two others were working in the shop of Pugh & Plews, chemists in Dundas Street, where they were learning dispensing, when a little fellow with a big head was brought in by some relative, probably his brother, and entered as a pupil. What struck Keiller specially was that as soon as the new-comer was left to himself he sat down at the counter with a copy of Duncan's *Dispensatory*, and after studying it for a little turned round and looked at the shelves, got up and took down some drug and read it up in the book, and then another and another, till his time was up, and the older hands saw that their companion was determined to carry out of that shop all that the big head could hold.

The friendship begun in the chemist's shop lasted unbroken throughout the lifetime of the two men. Keiller recognised Simpson's supremacy, and knew both how to help and to get help from his fellow-worker. Many of us must have heard him speak of an encounter he had with a brother obstetrician who had some "gumption" against Simpson and had ceased to attend the meetings of our Society. The confrère wished to persuade Keiller to desert it also, saying, "The Obstetrical Society is just Simpson's rake." But that to Keiller was one of the charms of the Society; he got the good of all that was raked together for discussion there, and was for many a year one of the most zealous contributors.

Already, during the seven years of his general practice in Dundee, he had taken special interest in cases of obstetric moment, notes of which he sent to his old fellow-student in Edinburgh. It was probably in acknowledgment of the record of cases of intra-uterine ichthyosis that he received from Simpson the following letter:—

"22 ALBANY STREET, EDINBURGH,
4th November 1843.

"MY DEAR DR KEILLER,—I ought long, long, long ago to have acknowledged your most splendid contribution. It is quite magnificent. The truth is, I have had a course of headaches, that took all pith of working out of me, beyond the daily drudge of visiting. I have been for a few days out of town, and have come home much better. I hesitated where to go when sent out of town, and was on the point of running to Dundee to see it and you, and the cases you have so well reported and sketched. I do not know how sufficiently to thank you. I am far too busy at present to think of writing up the paper, but will do so soon, and will be proud to acknowledge your zealous labours.

"Keep your eyes open, and do send something for our journals yourself. You have in you the power of doing much more than you suppose.—Yours very sincerely and gratefully,

"J. Y. SIMPSON."

The last sentence in that letter touches very tenderly the weak point in Dr Keiller's character and career. A certain diffidence or dilatoriness seemed to keep him back from giving complete records of his extensive observations, or bringing into full prominence and perfection his many fertile suggestions for improved forms of instruments or methods of treatment. It would take much time to run over a mere catalogue of all the communications he made to this Society and to enumerate the discussions in which he took a part. Perhaps his most important addition to our modes of treatment was in the application of the india-rubber air-bag for dilatation of the cervix uteri. It was on the 9th of March 1859 that he first made mention of the practice in the Society. The Minute-book, under the heading "On a New Mode of Induction of Premature Labour, with New Mode of Dilating Os Uteri, etc.," says,—"Dr Keiller detailed at considerable length the case of Mrs F., upon whom on a previous occasion he had performed craniotomy. Drs Weir and Little were present at this labour, when Dr Keiller used an india-rubber pessary, with which he dilated the os uteri and retained the cord which was presenting. The patient was delivered of a female child alive. Dr Keiller stated that having been so successful he intended pursuing the subject further, as he saw no limit to its use in cases where dilatation or plugging were required." The report adds,—"Dr Weir spoke highly of this method from what he had seen in Mrs F.'s case." In the same year, on the 11th of May, Dr Keiller is found again making remarks on other cases of induction of premature labour, illustrative of the use of the uterine dilator, and exhibiting the different modes of operating. In such fragmentary fashion he was making his friends and fellow-members acquainted with the value of this important method of facilitating labour; but a more energetic member of the profession in London, working along the same line, succeeded in more rapidly improving the hydrostatic dilator and extending the knowledge of its virtues; so Keiller had to see "Barnes' bags" take the place in the hands of obstetric practitioners and in the text-books of obstetric students, that with a little more push he might have won for his own. In the department of gynecology a like fate befell an instrument which he described to us as a "uterine sound and cervical dilator, conjoined." Probably few of the younger Fellows have ever seen it or heard of its existence, for the Ellinger dilator and its modifications have entirely cast it into the shade. But Keiller's instrument has the principle of dilating the cervix by separation of the two halves of an implement that can be passed through the cervical canal, and before I had become acquainted with the more effective dilators, I have occasionally made use of it with satisfactory results in cases demanding the slighter degrees of dilatation.

But it was not only by his numerous communications to this and to the Medico-Chirurgical Society that Dr Keiller contributed to the advances made in his day to obstetrics and gynecology After he had for three years tested his powers of exposition by conducting a course of lectures on Medical Jurisprudence—a department of Medicine allied at many points with our own, and one in which Dr Keiller was an acknowledged expert—he began in 1852 a long and honoured career as a lecturer on Midwifery at Surgeons' Hall. Many of the best of the Edinburgh students enjoyed the benefit of his prelections, and some who rose to eminence testified on the occasion of his candidature for the University Chair to the privilege they had felt it to have been his pupils, and to his well-known abilities as a painstaking and successful teacher. They got, like the members of our Society, the good of his rich stores of clinical experience, of his ingenuity in suggesting better modes of treatment, and his inventiveness in contriving new instruments or improving older ones.

There is yet another service which Keiller rendered to the medical schools of Edinburgh that should be remembered to his credit. When, in 1851, he was appointed one of the Ordinary Physicians to the Royal Infirmary, the cases in his wards were of a miscellaneous character. Gradually, however, by an arrangement with his colleagues Dr W. T. Gairdner and Dr Warburton Begbie, all the more important cases of the diseases of women were put under his charge, till No. XVI. became almost a purely gynecological ward. There thus grew up under his care the gynecological department of the extra-mural course of clinical lectures which has since been so ably maintained by his successors Dr Matthews Duncan, Dr Angus Macdonald, and Dr Halliday Croom.

In the treatment of his patients in the ward he showed himself ever open to the advances that were being made in operative gynecology. In some directions, as we have seen, he devised fresh lines of treatment, and especially in the performance of plastic operations his dexterity and painstaking enabled him to achieve in many cases remarkable success. The results of his labours there and in the Maternity have enlivened so many of our meetings, and enriched so many pages of our Transactions, and he filled so well the various offices of Councillor, Secretary, Treasurer, Vice-president, and President in our Society, that I am sure I have your support in offering this tribute of respect to his memory, and in sympathizing with his widow and family in their sorrow for his loss.

Another name of yet wider renown disappears this year from the list of our Honorary Fellows. On the 14th of March, Carl Siegmund Franz Credé died full of years and of honour. Of French extraction, he was born in Berlin on 23rd December 1819. In the great University of the Prussian capital he received the greater part of his medical training, though he had spent one semester at Heidelberg, where he made the acquaintance of the illustrious Naegele. After graduating at the age of 22, he visited Vienna, Belgium, Italy, and France, and spent several months in Paris, attending the obstetric cliniques and giving special attention to cases of childbed fever. He used to tell that when he was making inquiries as to whether any means of curing or preventing puerperal fever had been found, he was staggered by the answer, "Do you still imagine, then, that there is a remedy for that disease?"

Happily for obstetrics there was no opening for service for the young doctor in Dieffenbach's surgical clinique at the time of his return to Berlin. Busch, however, the Professor of Midwifery, took him as his assistant, and for five years he worked in the same institution from which Hecker and Schultze and others of Germany's ablest obstetricians emerged. In 1849 he obtained the qualification entitling him to deliver independent courses of lectures on midwifery. The young Privat-docent began with a class of four; but the numbers rapidly increased, and in 1852 he was appointed Director of the School for Midwives and Physicians in the Charité Hospital. Here he developed a gynecological department, for which his son-in-law, Professor Leopold, from whose *Gedächtnissrede*[1] I obtain details of his history, claims that it was the first in Europe to be devoted solely to the treatment of diseases of women and for clinical purposes. When I came upon that sentence in Leopold's touching address I felt sure that Credé's action in Berlin had been anticipated in Edinburgh, for I remembered that when I came here as a student in November 1850, my uncle had already a special ward in our Royal Infirmary under his charge; and on inquiring of Mr Trainer, the secretary of that Institution, he has kindly furnished me with the following:—

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[1] *Archiv für Gynækologie*, 1892, Bd. xlii. p. 198.

Excerpt from Minutes of Meeting of Managers of the Royal Infirmary of Edinburgh, held on 18*th February* 1850.

. . . .

"The Managers farther resolve:—

"1. That until the addition to the Medical House shall have been built, the clinical medical wards shall continue as at present to be wards Nos. 1, 2, 11 and 12, and that No. 2 shall be appropriated for diseases of the skin, and No. 12 for the diseases peculiar to women and infants.

"2. That the ward No. 12 shall be placed under the charge of the physician to be chosen by the Managers as aforesaid, who shall be entitled, and if called upon by the Managers shall be bound to deliver lectures on the cases under his care, but that no patient shall be placed in that ward until she has been made aware by the treasurer, superintendent, or matron, that she will be under the said physician, and may be more peculiarly the subject of attention to the lecturer and the students than she might be in a general ward. And, farther, that no children excepting infants shall be placed in that ward."

. . . .

Excerpt from Minutes of Meeting of Managers of the Royal Infirmary of Edinburgh, held on 11*th March* 1850.

. . . .

"The Managers then proceeded to the election of a physician to take charge of the treatment of diseases of women and infants, and on the motion of Dr Seller, seconded by Dr Pagan, Professor James Y. Simpson was appointed to the charge of the ward No. 12, subject to the regulations of the Hospital, and the provisions contained in the resolutions of the Managers of the 18th February last with reference to that ward.

"The clerk was directed to communicate the appointment to the Medical Faculty of the University and to Professor Simpson, with a request that he will attend at next meeting of the Managers to take the oath *de fideli.*"

It was never found convenient to admit the infants referred to in the minute, so that if Leopold's claim for Credé holds good for the Continent, we must conclude that the Edinburgh Royal

Infirmary was the first to set up a distinct gynecological department with provision for clinical instruction. It was fitting that this should occur in the city whose Provost and Town Council more than a century before had instituted the first of all the Professorships of Midwifery and the Diseases of Women.

In the summer of 1856, Credé went to Leipzig to fill the Chair of Midwifery vacant by the death of Jörg, where at the time of his appointment he had for colleagues the brothers Weber in Anatomy and Physiology, Günther in Surgery, and Wunderlich in Medicine. There the rest of his life was spent, and when he died he was the oldest of the medical professors in that famous University, and the Nestor, says Leopold, of German midwifery. It was in the early winter of the same year that I had the gratification of seeing him strenuously set to work in the development of his obstetrical and gynecological Institute, and the pleasure of a personal interview was renewed on the occasion of his brief visit to Edinburgh in 1873, with his friends Spiegelberg and Ploss, who both predeceased him.

Fritsch, in his obituary notice of Credé in the *Centralblatt* (June 2, 1892), lays stress on three important improvements in practice which make his name deserving of all honour. He was the first, Fritsch states, to introduce the cephalotribe into general use in Germany. Cephalotripsy was certainly an immense improvement on the methods of head-reduction previously in use, and by means of it maternal mortality was markedly reduced. To have improved the construction of the instrument and extended its sphere of application was to have rendered a very valuable service to obstetrics. It was one of the things that impressed me most deeply in German midwifery to find in all the different schools that all other forms of craniotomy had been discarded, and that the only question was as to the best variety of cephalotribe. Yet the reign of the cephalotribe was of comparatively short duration. For after Braun of Vienna had recognised the value of the cranioclast, which was first exhibited by Simpson at our Society, and had made his well-known modification in its construction, the use of it was rapidly superseding the use of the cephalotribe, when the whole area of head comminution began to be circumscribed, till it is now lessened almost to the vanishing point by improvements, on the one hand, in the construction of the forceps, and, on the other, in the modes of carrying out the Cæsarean operations. In advances in both of these directions, Credé's pupils Leopold and Sänger have, under his encouragement, taken a notable part.

The change in practice with which the name of Credé was first and most familiarly associated concerns the management of the third stage of labour. In the *Klinische Vorträge ueber Geburtshülfe*, which he published before he left Berlin, and which is a mine of valuable observations on various obstetric subjects, he already points out the dangers of the then usual practice of furthering the escape of the placenta by traction on the cord, and insists on the necessity of abstaining from all such interference and securing the complete delivery by pressure on the uterus instead. This practice he further carried out after his removal to Leipzig, and by contributions to the obstetric section of the *Naturforrscherversammlung*, and papers in the *Monatschrift für Geburtskunde*, he succeeded in impressing the value of his procedure on the minds of his fellow-countrymen, until the *Credé'sche Verfahren* became the almost universally adopted method of management, to the lessening of the frequency of hæmorrhages in the third stage and post-partum, of inversions of the uterus, of retention of the placenta or placental fragments, and other risks that had attended previous lines of practice. No doubt the expression of the placenta by the abdominal grasp of the uterus was in many hands overdriven, the compression being carried out too speedily and too powerfully, with the result that new dangers arose, which led some German obstetricians a few years ago to resort, as with a pendulum swing, to the expectant line of practice, which leaves the expulsion of the placenta to the unaided action of the uterus and abdominal muscles, even though it lodged for hours in the genital canals or cavities. In the hands of Credé himself, however, and of those who were careful to attend to his precepts, the practice has proved eminently safe and salutary, and it is the kind of treatment expounded and enjoined to-day in all the leading text-books of midwifery. The disastrous results of traction on the cord were not so frequently witnessed in midwifery in this country, for Clarke of Dublin, in particular, had already enforced to some degree the necessity of conjoining pressure from above with traction from below, so that a line of practice closely resembling that commended by Credé is sometimes described as the Dublin method of delivery of the placenta. Still there was room among ourselves for improvement in the direction of abstinence from internal interference and appreciation of the value of external pressure; and I count it among the honours of my life to have had the privilege of explaining to this Society, nearly thirty years ago, Professor Credé's method and helping to give it its place in British practice. It is always to be borne in mind that it belongs to a general movement on the part of obstetricians to trust more and more to external manipulations both in diagnosis and treatment, and to have less and less recourse to all varieties of internal interference; and the diminution of the danger of introduction of septic matter with the fingers or hands into vagina or uterus during labour is largely due to the initiative of Credé.

Perhaps an even more indisputable claim to lasting renown is to be found in his discovery of the means of preventing ophthalmia neonatorum. It was in 1881 that he published in the *Archiv für Gynækologie* the results of his practice in a paper entitled "Die Verhütung der Augenentzündung der Neugeborenen," in which he showed that by washing the eyes of all the infants immediately after birth and introducing with a glass rod a drop of a solution of two per cent. of nitrate of silver, he had succeeded in banishing from the Leipzig Maternity a disease that a few years previously had attacked more than 13 per cent. of the infants, and that sometimes had eventuated in their total blindness. Our Transactions show that this important prophylactic measure was soon appreciated among us, and I am myself convinced, from the results of the experience of our own Maternity, that if ever infants suffer from a dangerous ophthalmia it is because the attendants at its birth failed to carry out the precepts of Professor Credé.

Whilst in these directions he laid the obstetric world at large under the deepest obligation, there were others in which he also rendered service of no little value. Such are his papers on the management of the puerperium and his suggestions for the use of an incubator for the rearing of premature infants, though in those matters Tarnier and others take precedence of him. But we must further bear in mind that in his editorial work in the *Monatschrift für Geburtskunde*, and still more in the establishment in 1870 of the *Archiv für Gynäkologie*, which he edited at first along with Spiegelberg, and afterwards with Gusserow until the time of his decease, he contributed mightily to the development of every branch of midwifery and the diseases of women and children, and aided in the spread of the knowledge of all that was newest and best.

It is an honour to our Society to have had Credé's name for eight and twenty years on its list of Honorary Fellows, and with all the obstetric world we now lament his loss.

II.—CLINICAL LECTURE:

ON A CASE OF FIBROID PHTHISIS, WITH GREAT DISPLACEMENT OF THE HEART.

By ALEX. JAMES, M.D., Physician to the Royal Infirmary.

J. S., aged 52, a pilot, was admitted to Ward XXX., October 14th, 1892, complaining of pain in the side and cough.

History.—An uncle on his mother's side died of stone-mason's phthisis, but with this exception his family history is excellent. He is the father of eight children, of whom six are well and strong. The other two died in infancy. Habits have always been temperate, and his surroundings at home have always been favourable. At work he is somewhat exposed, but as a pilot his work is not unhealthy.

Previous Illnesses and Accidents.—Twenty-two years ago, when sitting on the top of a loaded omnibus, with his back to the horses, he was driven through an archway which seems to have been too low for its requirements, for the back of his head was knocked against it so violently that he was thrown senseless to the ground. He soon recovered from this, but he states that ever since then his sense of smell has been completely lost. Ten years ago, when pulling in a boat race, he became completely exhausted, and had to be lifted out of the boat. He then threw up more than a large teacupful of blood, and for about two months continued to throw up blood in smaller quantities. Ever since then he states that he has had a cough, but up till two years ago it troubled him so little that he paid no attention to it. Two years ago, after exposure to bad weather, he complained of pain in his left side, and for this he came to the Infirmary, and was treated for a dry pleurisy. After six weeks' treatment he went out much improved. At this time the condition of his right lung and the position of his heart, to which we shall have to refer later, were observed.

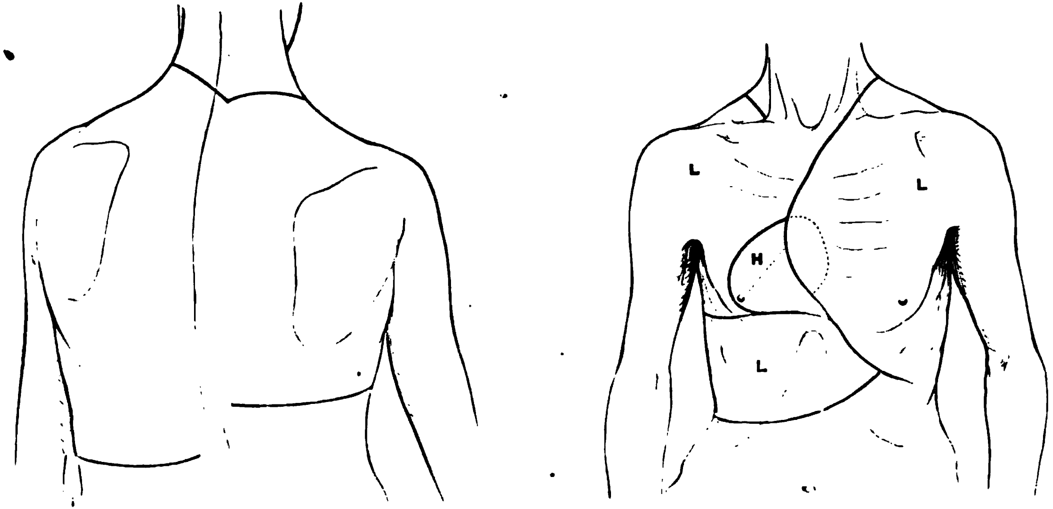
Present Illness.—Six weeks before his admission he had a severe bleeding—throwing up at least a breakfast-cupful of pure blood. This bleeding, but in smaller quantity, continued for nearly a fortnight, and he states that during this period he also spat up material "as from a rotten gathering." Four weeks ago a severe, cutting pain arose on his left side at the same place as two years ago, and finding himself unable to work, he came again to the Infirmary. Although his present illness began six weeks ago, he seems to have been distinctly weaker for over a year. His appetite has been failing: for example, after a small breakfast he rarely had more than a sandwich and a glass of whisky—and often not caring for this—till night, when at supper a cup of tea and bread, with perhaps a little fish, sufficed.

State on Admission.—Height, 5 ft. 4¾ in.; weight, 7 st. 6¾ lbs.; before this illness was 9 st. 6 lbs. His muscles have the appearance of having been well developed, but are now small and flabby. Temperature varies from 98° to 99° F.; pulse about 70 per min.

Respiratory System.—Respirations, 25 per min. Cough slight, specially in the mornings. Spit scanty, viscid, muco-purulent, and opaque. Repeated examinations have been made for bacilli, and we have concluded that, if these or lung tissue are present at all, they must be in very minute quantity.

On inspection and palpation, marked flattening is recognised over the upper part of the right chest, with deficient respiratory movement and increased vocal fremitus. Over the second and third right interspaces anteriorly the palpating hand can feel crepitations. The entire left chest seems enlarged. On measurement over the nipples the left side is found to be 16½ inches as against 16¼ on the right side. It appears, therefore, to be larger than it really is, but it is to be remembered that the right chest is normally the larger.

On percussion, dulness is found over the upper part of the right lung, extending downwards to the fourth rib anteriorly, and



The above Figures (from photographs) show the shrinking of the right lung, the hypertrophous emphysema of the left, and the displacement of the heart and liver.

to about 1 in. below the spine of the scapula posteriorly. Over this dull area, but specially marked in the infra-clavicular region, auscultation reveals prolongation of the expiration—bronchial or cavernous breathing—coarse consonating crepitation, and increased vocal resonance and whispering pectoriloquy. Over the lower portions of this lung the breathing is harsh and indeterminate, with a few crepitations and rhonchi. Over the left lung the percussion note is everywhere resonant, and the breathing is puerile, with here and there a few rhonchi and crepitations, and in the sixth and seventh interspaces in the axillary line well-marked friction is heard.

By percussion and auscultation the boundaries of the lungs are made out as follows (see Plate):—

Left Lung.—Upper border can be traced from the left sterno-clavicular articulation upwards and outwards to the edge of the trapezius muscle, where it is 2¼ in. above the level of the clavicle, thence inwards and downwards to the vertebra prominens.

Right Lung.—Upper border cannot well be demonstrated at the right sterno-clavicular articulation, but at the anterior edge of the trapezius muscle is 1¼ in. above the level of the clavicle. From this point it can be traced to the vertebra prominens along a line much curved with its convexity downwards.

Left Lung.—Anterior border can be traced from the left sterno-clavicular articulation to the right and downwards, so that at the second right interspace it reaches a point one-half inch to the right of the right border of the sternum. Thence it passes downwards, slightly inclining to the left, till at the level of the fifth costal cartilage it meets the liver dulness about one-half inch to the left of the right border of the sternum.

Right Lung.—Anterior border cannot well be traced above, owing to its being more or less consolidated, but, in the right parasternal line, is found at the level of the second interspace an impaired percussion note, and at the level of the third interspace a dull note, due to the displaced heart. At the level of the fourth rib the anterior border of the right lung is at the right nipple, being apparently retained at this point by the apex of the displaced heart. From this point the anterior border of the lung passes obliquely inwards and slightly downwards till it merges into the liver dulness at the level of the fifth rib, about 1¼ in. to the right of the right border of the sternum.

Left Lung.—Lower border in parasternal line corresponds with the sixth costal cartilage, in the mammillary with the seventh costal cartilage. In the axillary line it corresponds with the ninth rib, and in the scapular with the lower border of the twelfth rib.

Right Lung.—Lower border corresponds in the mammillary line with the fifth, in axillary with the seventh, and in the scapular with the ninth rib.

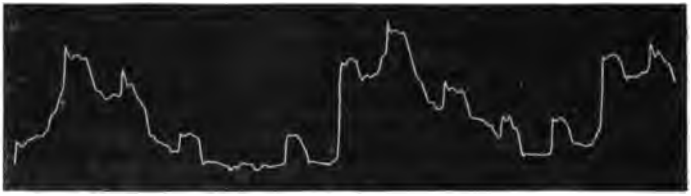
These marked changes are all, as we shall see shortly, connected with the cicatricial healing processes which are going on in connexion with the disease in the right upper lobe. Let us now pass on to the circulatory system.

Pulse, 72 per min., beat rather soft; arterial walls normal.

Inspection shows visible pulsation in second, third, and fourth right interspaces, and a very distinct impulse beat in the fourth interspace about half an inch internal to right nipple line. These signs are corroborated by palpation.

Percussion shows the dull area of the heart to be irregularly quadrangular in shape, its extreme right limit being at the right nipple, its extreme left about the middle of the sternum, its upper border coursing obliquely across the second and third interspaces, and its lower border merging into the liver.

Auscultation shows nothing more than that the heart sounds are heard loudest to the right of the sternum, and a cardiographic tracing taken from the impulse beat in the fourth right interspace has all the characters of an ordinary apex tracing (see Tracing).



Digestive System.—Though his appetite is not great, his digestion seems to be fairly well performed. He is always rather constipated. Inspection and palpation of the abdomen reveal nothing abnormal. The liver is evidently drawn upwards, its upper border corresponding in the nipple, axillary, and scapular lines with the fifth, seventh, and ninth ribs, its lower border being about 1 in. higher than the costal margin in the nipple line. The spleen appears normal.

Urinary System.—Amount, 40 oz., acid; sp. gr., 1020; no albumen.

Integumentary System.—Normal, never perspires much.

Nervous System.—Normal, with the exception of his loss of the sense of smell.

The diagnosis made was chronic pneumonic or fibroid phthisis of the upper lobe of the right lung of some ten years' duration. Though gradually progressive, it has been associated with, and its progress restrained by marked cicatricial fibrosis of the lung tissue, and this fibrosis had led to the shrinking downwards of the lung apex, to the shrinking upwards of the lung base, to the marked displacement of the heart to the right, and to the enlargement (hypertrophic emphysema) and dragging over of the sound lung.

Now I wish to say something about this fibrosis and its results in general, and in this case in particular. Observe, in the first place, that in the main it is a salutary process. Occurring around foci of softening or around cavities it tends, like cicatricial tissue elsewhere, to contract and encapsule or obliterate them, and in many cases where the lung mischief is limited it completely succeeds in its healing efforts. Unfortunately in so many cases the foci of disease are multiple, and so contraction around one focus or set of foci is apt to drag on or tear the new-formed tissue round others, to dilate other cavities or bronchi, and so to act injuriously. Like everything else in nature, this fibrosis presents harmful as well as beneficial aspects, but like everything else in nature it tends also in the main towards the latter; and where, as in our patient, the yielding of the parts around—chest wall, liver, healthy portions of lung, heart, and opposite lung—can all work together to help it, it is wonderful how the effects of disease can by it be counteracted.

This patient illustrates the immense importance, from the prognostic point of view, of the disease being unilateral. It is evident that if the other apex, the left, were also affected, not only would the fibrotic change in connexion with it be rendered more difficult, but it could not yield the same assistance to the disease at the right apex. The most rapid cases of phthisis are those in which at an early stage both apices are found affected, and in practice you will often find that a patient in whom unilateral disease has gone on till the lung is little more than a mass of fibrous tissue and cavities, will come to see you year after year, looking little the worse, whilst another, in whom you have found only a little impaired percussion note and crackling at both apices, has lived only a few months.

The displacement of the heart to the right which this patient presents is more than one usually sees, and merits a few remarks. I have seen it occurring to a similar extent in four cases—three males and one female. In two of the males the disease of the lung which had brought it about had been arrested years before I had seen them, and coming before me for other ailments, the condition of the heart had been recognised accidentally. The evidence of old lung mischief was easily made out in the shape of impaired percussion note and weak respiratory murmur at the right apex, and indications of shrinking in this locality. In three of the male cases (including the patient whose case we are now considering) there was a distinct history of strain.

The mode of displacement of the heart in this and other such cases I believe to be as follows:—With the base of the heart as the fixed point and centre of a circle, the long axis of the heart, like the radius, has described an arc to the right, whilst at the same time the organ has rotated on its long axis so as to bring the left ventricle more anterior. No doubt the entire organ and the mediastinum are dragged over to some extent *en bloc*, but I believe that this tilting of the apex to the right and the rotation are the chief causes; and it is to be remembered, too, that the dragging up of the liver may now be assisting in this displacement. With such a displacement one might suppose that some twisting or kinking of the large vessels would certainly occur and cause bruits, but such bruits have not markedly been present in the examples of this condition which I have seen.

A question which you may ask here is, How long has this displacement existed? We cannot say definitely. We know that it has been so for the last two years at least; we may suppose that it has been so for a much longer time. In one of the other cases, in which I found a very similar displacement, the mischief in the right upper lobe had existed for two years.

So much for the fibrosis and the results of it which this patient presents, let us now say a little as regards some other features in his case.

It will be remembered that the disease seems to have begun some ten years ago, when as the result of a severe strain he felt faint and coughed up a large quantity of blood. He tells us that since then he has noticed the cough, which is still going on. Are we to suppose that this is a case of *phthisis ab hæmoptoe*, that we have here an example of a hæmorrhage setting up a chronic phthisical process? Or are we to suppose that, unknown to our patient, there had been some tubercular deposit at his right apex in connexion with and eroding the wall of an artery; and that, as the result of the increased blood-pressure which the straining entailed, the wall had given way at that point and caused the hæmorrhage? By the older writers the first view would have been upheld, whilst the new school would most strenuously uphold the latter. To say which has been the cause is well-nigh impossible. Although his family history is good, although his health prior to the accident had been excellent, and although subsequent to his illness his constitutional strength has been able so well to counteract the ravage of the lung disease, we can never be sure that tubercular deposit did not pre-exist. Further, we know that in the great majority of cases of phthisis which are said to have begun by a hæmorrhage, closer inquiry will show that tubercular deposit and erosion of a vessel has been the real factor. On the other hand, we cannot deny that *phthisis ab hæmoptoe* may have a real existence. Hæmorrhage into the lung may occur independently of tubercle, and hæmorrhage means injury and irritation of the lung tissue, and the induction in it of a nutritive condition so weakened that the attacks of the ubiquitous tubercle bacilli cannot be withstood. The precise meaning of the first hæmorrhage in this case cannot well be understood. Had it been caused by some external injury instead of by a strain, the argument in favour of the *phthisis ab hæmoptoe* theory would, of course, have been stronger.[1]

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[1] For instances of phthisis following injury to the lung see Mendelsohn *Zeitschrift fur Klin. Medicin,* Bd. 10.

But next it is to be noted that subsequent bleedings have occurred. These, as regards causation, are easily understood. By the fibrotic contraction cavities and dilated bronchi have their walls dragged upon here and there, and arteries in these walls exposed. These, from want of support and other causes, develop miliary aneurisms, which in their turn are very liable to rupture. Indeed, it is in cases of this kind, with fibrosis, cavities, and dilatated bronchi, that severe and sometimes fatal hæmorrhages are most prone to occur. These are the cases in which miliary aneurisms are most common, and the patient's general condition being fairly good, the heart is strong and the blood-pressure high.

Next, as regards prognosis in this case. There is no doubt that in such patients the immediate prognosis is favourable enough. In the absence of active lung mischief the cough and expectoration cause little trouble, whilst fever, with its associated anorexia, dyspeptic troubles, thirst, sweatings, etc., is absent.

But the remote prognosis is most unfavourable; the extent of the disease has long since precluded the possibility of complete arrest and healing. The cough and expectoration must continue, and as time goes on we may expect that, with the gradual lessening of the nutritive power, the disease will spread more rapidly and the fibrotic contraction will be less efficient to counteract it. A tubercular element may gain prominence. The other lung may be involved, and this, as we have described, would tremendously accelerate the progress of the disease, whilst attacks of hæmorrhage are, as we have seen, likely to occur from time to time, and still more weaken the patient.

With the lessening of the ærating surface in the lungs, congestion of these organs will be apt to occur, and this will entail increased liability to attacks of bronchitis, or pleurisy, or pneumonia. Further, the backward pressure of the blood is apt to extend to the right heart and cavæ, and with ensuing congestion of the liver and portal system, of the kidney and of the lower limbs, digestive troubles, nephritic troubles, and dropsy may at any time show themselves. In such cases clubbed fingers are distinctly frequent.

The treatment in instances of this kind is mainly attendance to the general health and the careful avoidance of cold. Cough mixtures are quite unnecessary,—a warm drink—tea or milk—in the morning being all that is required for the cough and expectoration. The diet should be as nourishing and in as small bulk as possible, and should therefore consist to a large extent of animal food; alcohol in one or other of its forms has been recommended on the theory that it promotes the formation of fibrous tissue. Cod liver oil and syrup of iodide of iron seem often to suit such patients, whilst any work or exercise which necessitates strain should for obvious reasons be avoided. Sunlight and the open air are always to be desired, and were our patient's circumstances such as to permit of his spending the winter and spring months under good climatic conditions, he might without doubt even yet add years to his life.

The only other point in this case to which I wish to refer is the loss of the sense of smell. This I believe to have been due to the blow on the back of his head (see page 602) having caused rupture and consequent degeneration of the fibres of the olfactory nerve at their points of passage through the cribriform plate of the ethmoid bone.

III.—FURTHER CONTRIBUTIONS TO THE STUDY OF VERSION ON ONE LEG.

By Dr W. Nagel, Privat-docent of Midwifery and Gynæcology in the Royal University of Berlin. Communicated by Dr J. W. Ballantyne.

(*Read before the Edinburgh Obstetrical Society, 9th November* 1892.)

It is universally recognised—and here in Edinburgh, in especial, it is still fresh in men's memories—how largely the introduction of version on the further leg was due to Sir James Simpson; and his exposition of the advantages of the upper leg in difficult cases of turning was so striking that, to this day, many distinguished accoucheurs think it correct to turn by the further leg only. Meanwhile, however, opposition to this practice has not been wanting. Galabin of London, more especially among later writers, has set forth with great acumen the advantages offered by seizing the lower leg;[1] and it must now surely be regarded as a fact that it is a matter of indifference which leg is taken, as far as the turning of the fœtus in the uterus is concerned. The results of theoretical considerations, experiments upon the phantom, and the clinical experiences of late years, all agree in demonstrating that the conversion of the transverse into the longitudinal presentation can be performed as satisfactorily with the lower leg as with the upper—a conclusion I can support from my own clinical experience, obtained in ninety-four cases of transverse presentation, in nineteen of which the membranes were intact at the time of version, and nine of which were in connexion with placenta prævia.

Every experienced accoucheur, however, will doubtless have now and again met with a case in which strong pains have pressed the presenting shoulder far into the pelvis, and in which the turning of the fœtus, no matter which leg is seized first, cannot be accomplished till both legs have been brought down. Of recent years, G. E. Herman[2] has described three cases where strong con-

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[1] A. L. Galabin, "On the Choice of the Leg which should be Seized in Version for Presentation of the Upper Extremity," *Transactions of the Obstetrical Society of London*, vol. xix., 1877, p. 239.

[2] G. E. Herman (London), "Note on One of the Causes of Difficulty in Turning, with Remarks on the Practice of Amputating the Procident Arm," *Transactions of the Obstetrical Society of London*, vol. xxviii., 1886, p. 156.

traction of the lower uterine segment was an obstacle to the turning of the fœtus, even after both legs were brought down. I myself met with a pronounced case of this kind in Berlin some months ago; and as it gives an illustration of the condition described by Herman in a more advanced stage, I should like to communicate it here—inasmuch, as also pointed out by Galabin and Champneys,[1] as an extrusion of the lower uterine segment as a hindrance to version in *transverse* presentation is of very rare occurrence now-a-days. My case was that of a multipara, 41 years of age, at full term, where the right arm had fallen forward simultaneously with the escape of the waters; very violent pains began immediately, following one close upon another, and passing forthwith into strong pressing down pains. It was night, and the distance was considerable, so that the midwife's message did not reach me till four hours after the escape of the waters. I hastened to the patient at once, and found her undergoing very violent pains, the temperature normal, and her pulse 76–80. The ring of contraction was very strongly marked, so that it could be seen and felt at the height of the navel; the fœtus lay in the markedly distended lower uterine segment, as could plainly be seen (after the patient had been put under chloroform) through the thin walls of the abdomen, and be ascertained on merely external examination; the corpus uteri lay up to the right like a hemisphere upon the distended uterine segment; the prolapsed arm was born up to the shoulder; immediately behind the introitus vaginæ lay the thorax; the head on the right iliac bone; the back posteriorly. Having assured myself that the child was dead, I did not attempt version, on account of the threatening symptoms with regard to the uterus, but decapitated the child, after which successful delivery easily followed. The puerperium was quite normal.

A number of eminent accoucheurs, both in former and recent times (Baudeloque, Lachapelle, Hohl, Gusserow, and others), did not regard the choice of the leg from the point of getting the most favourable handle for turning the fœtus, but took that leg which came in front behind the symphysis immediately after version; for they took into account the well-known fact that the delivery of a mature child in incomplete foot-presentation can only proceed without assistance when the leg outstretched lies in front behind the symphysis. In consequence of this consideration, the above-mentioned authors chose the upper leg in dorso-posterior positions, and the lower one in dorso-anterior.

Galabin[2] and Fritsch[3] are of opinion, however, that in the dorso-posterior positions, when the further leg is taken, the back of the fœtus remains in many cases posterior; in other words, that the leg which is brought down immediately after the completion of version does not lie in front behind the symphysis, but has to turn then in that direction, so that the advantage aimed at is completely lost. Fritsch, however, is only speaking of the back, and not of the legs; he does not tell where the leg, which was taken, was lying after version in his seventeen cases—whether it was lying in front behind the symphysis, or in the hollow of the os sacrum. Galabin also is speaking of the back, and does not mention the position of the leg that is down. I suppose, however, that the two authors, in giving the position of the back, intend at the same time to state the position of the leg that is down; then it is, I think, quite indifferent that the back is posterior after version, if not at the same time the leg, which is taken and now outstretched, is situated in the hollow of the sacrum.

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[1] *Trans. of the Obst. Soc. of London*, vol. xxviii., 1886, p. 153.

[2] Galabin, *ut supra.*

[3] Fritsch, "Zur Lehre vom Ergrengen der Füsse bei der Wendung," *Archiv f. Gynäcologie*, Bd. iv.

Fritsch and Galabin support their view by their clinical experience, and there cannot be any doubt as to the accuracy of the observations of these practised observers. I may, however, claim the same right with regard to the exactness of my own observations; and these contradict the assertions of the two observers. In nineteen cases of dorso-posterior presentation, in which, in accordance with Gusserow's precepts, I took the further leg, this leg came without exception in front behind the symphysis after version, and there remained. The fact that Galabin's and Fritsch's observations are absolutely contradictory to mine is not easy to explain; I think, however, that the exposition Galabin gives may be very aptly employed to this end. Galabin says (*ut supra*, p. 246),—"In abdomino-anterior positions, however, the pubes allows but scanty space for the hand to be bent backwards round the sharp angle at the concave side of the pelvic curve. Hence the hand naturally deviates more or less to one side, and traction is not directed sufficiently forward with regard to the pelvis and the fœtus. At the same time, by its lateral deviation, it tends to rotate the fœtus about its antero-posterior axis."

To this explanation I should merely like to add, by way of complement, that it is especially good for the cases where, in the conditions supposed, the breech lies *deep* near the os: in such cases I think it may most frequently be observed—though I myself have not hitherto met with it—that the leg which is taken, even though it be the further one, simply glides down sideways on being drawn forth, without that rotation of the fœtus about the longitudinal axis which is aimed at. But, on the other hand, if the breech is situated *high* (in the fundus uteri), the mechanical process of turning will resemble that in head presentation, *i.e.*, will exhibit a rotation over the abdominal surface of the fœtus about the transverse (bilateral) diameter of the fœtal trunk, and the further leg (that opposite to the presenting shoulder) will lie in front behind the symphysis immediately after the version is completed. A further reason for the result in my cases may exist in the fact that I placed the patients—following Gusserow's precepts—on the side at which the legs lie, and if they lie to the right, introduce the left hand into the uterus, and conversely. In this position it may be easier to draw the leg forward during the version, and thus rotate the fœtus about its longitudinal axis.

In the majority of cases of *dorso-anterior* position, the lower leg will lie in front behind the symphysis immediately after the version is accomplished. An exception to this is formed, however, by those dorso-anterior positions in which the breech is situated in the fundus, and the mechanical process in turning the fœtus resembles that employed in head presentation. In such cases—as I have observed on the living subject, and as, moreover, any one may easily convince himself of with the phantom—it will often be found, on taking the leg that corresponds to the presenting shoulder, that this leg lies at the back, after version, in the hollow of the os sacrum, and must therefore now rotate to the front. Take, for example, a first dorso-anterior transverse position. In such a case, if the breech lies *deep* near the os uteri, the lower leg when taken will come immediately behind the symphysis; but should the breech, in the position supposed, be situated *high* in the fundus (and this not infrequently happens in practice), then, having regard to the origin of the position, we must consider it as a second head presentation, in which the head has been diverted so far to the left that the shoulder, and not the head, constitutes the presenting part; as in the second head presentation, the breech in the case supposed is situated high to the right in front, the legs high to the left behind. If now from the second head presentation we desire to turn in such a way that the leg which is taken shall come in front behind the symphysis after version, we must bring down the *left* leg; in the case we take, however, if we regard it as a transverse presentation—and this, from a practical standpoint, we are bound to do—the *left* leg is the *further* one. If the operator, as I have done in practice, draws this further leg down, it will come in front behind the symphysis after the completion of version, the mechanical process being analogous to that in the second head presentation. If, on the other hand, the operator follow the rule that in dorso-anterior transverse positions the *lower* leg (*i.e.*, the one corresponding to the presenting shoulder) is to be chosen, and therefore grasps the right leg, he will find in the case we take—as I have found in practice (see Case No. 23, *cp.* Case No. 29), and as others must certainly have done—that the leg he has taken (here the right) will be found posteriorly immediately after version in the hollow of the os sacrum, since the fœtus, on the drawing down of the leg, has turned in a fashion analogous to that in the second head presentation.

Whether, in the case here taken, the turning of the fœtus will happen in the manner just described, or in such a way that the leg which is grasped (the lower one) will come under the symphysis immediately after version will depend, in my opinion, partly upon the flexibility of the fœtus, partly upon the degree of contraction of the uterus about the fœtal trunk. Galabin, in the work referred to, searchingly investigated the importance of the first-named factor with regard to the turning round of the fœtus, and it is clear that in dorso-anterior positions, with the breech situated in the fundus, that the lower leg (*i.e.*, the one which corresponds to the presenting shoulder) can only be drawn forward along the lateral uterine wall towards the symphysis pubis, when the flexibility of the trunk is such that it can be to a certain extent doubled up, so to speak, over its right or left side. Now, this degree of flexibility will be especially induced when the tonus of the body is suspended, and therefore when the child is dead or in danger of death. It is, moreover, evident that this last-named species of turning requires more space than that described above. On the basis of this analysis, which tallies with my observations on the living subject, I come to the conclusion that in dorso-anterior positions, with the breech situated high, it is by no means to be taken as a fixed rule, that the lower leg (*i.e.*, the one corresponding to the presenting shoulder) lies in front behind the symphysis immediately after version. In all cases of version on the *further* leg in dorso-anterior positions, *except in the case just mentioned*, the back will, in the first place, lie posterior immediately after the version is completed; and here my clinical observations tally with those of Fritsch and Galabin, for in the cases of dorso-anterior position in which I performed the version by means of the upper leg, according to the precepts of Barnes, the leg which was brought down, and consequently the back as well, lay after the version in the hollow of the os sacrum. If, in *dorso-posterior* positions, the lower leg (*i.e.*, the one corresponding to the anterior shoulder) is turned, then, after the version, this leg will similarly lie back, as a rule, in the concavity of the os sacrum. In my cases of version of the last-named class I have never seen an exception to this rule; and, indeed, an exception is only possible when there has taken place within the uterus and during the version that rotation about the longitudinal axis of the fœtal trunk which otherwise always occurs at a later stage of birth, viz., after the performance of the foot presentation. I regret that Galabin has not mentioned this in his excellent work, since this is one of the chief objections of many accoucheurs to the seizing of the lower leg in the dorso-anterior position. It is, of course, perfectly true that the leg brought down, even in such cases, will *eventually* be the anterior one; and on this circumstance Galabin justly bases his advice—advice also given by Gusserow and others—to place a noose upon the prolapsed arm, so that there may be no difficulty with the release of the anterior arm in the subsequent extraction; but *first* the fœtal trunk must make the rotation about its longitudinal axis discussed below.

It is now a universally recognised fact—a fact brought into prominence, especially by Wigand and by Braxton Hicks[1]—that the fœtus in most cases of so-called transverse presentation lies obliquely, and not transversely, either the head or the breech being nearer the os. Which part lies deep, and which mechanical process in the turning is to prevail in a given case, must depend—I would wish to emphasize this—upon the original position (head or breech presentation) from which the oblique position has arisen; and it is evident that, after versions made under the above-mentioned circumstances—especially when the further leg is taken in the dorso-anterior position, and the nearer one in the dorso-posterior—the operator will often find an incomplete foot presentation with the *posterior* leg prolapsed. Now, as the child cannot be born in this position—I disregard here immature and macerated fœtuses—the question arises, What next is to be done?

It is a fact, as I have mentioned above, that the leg which is brought down, even though it at first lies back in the cavity of the os sacrum, finally rotates to the front in the course of labour after a longer or shorter interval. But of *the way* in which this rotation takes place, and of *the methods* by which it may be eventually assisted, we get no serviceable exposition, as I have before stated,[2] either in the text-books or in original works on this subject. I admit that in practice this question is often of subordinate importance. But it must be the task of a rational science of midwifery to gain the most accurate knowledge possible of the individual processes which are gone through in natural labour, in order that the way taken by Nature may be followed when help is necessary. For, even though one holds fast, as I always do, to the rule to wait for the pains of birth after version, and let Nature, gently assisted, complete the delivery, there will yet be cases in every accoucheur's experience where delivery must be accelerated as much as possible.

My observations, therefore, have had as their object to set forth the manner and way in which the fœtal trunk rotates about its longitudinal axis in incomplete leg presentation with prolapsed posterior leg, in order that this prolapsed leg may come in front behind the symphysis; and I believe, for the reasons just mentioned, that this may claim a certain share of interest from members of the profession. The cases all come from the Obstetric Polyclinic of the Royal Charité in Berlin, which I formerly superintended as Assistant-Physician; and my thanks are due to Professor Gusserow for granting me the material.

I bring forward over thirty cases of this kind, in which either I found the posterior leg prolapsed, or where, for various reasons, I brought down the posterior leg, and of which I made accurate notes during and after the delivery. In twenty-four of these I was present at the completion of the delivery, and saw the actual rotation; six times I was unable to do this, and in these six cases the rotation was observed by the obstetric clerk. I lay stress on the fact that in all cases the delivery was left to Nature after version was performed, so that the rotation here observed thus represents a natural process. Whenever in the later course of the delivery a pull was given to the leg, this is mentioned each time in the account of the case (see below). In ten cases I had to deal with placenta prævia, which I handled according to Braxton Hicks' method, effecting combined version as speedily as possible, and then leaving the extrusion of the child to the pains; in these cases, to stop the flow of blood, a pull was given (by means of a noose) to the outstretched leg, the pull being only such as could be produced by the weight of the arm alone; and I do not think that so moderate a pull could influence the natural process of the rotation.

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[1] Braxton Hicks, *On Combined External and Internal Version.* London, 1886.

[2] W. Nagel, "Zur Lehre von der Wendung auf einen Fuss," *Archiv für Gynäkologie*, Band xxxix., 1891.

In the whole of the thirty cases *the rotation of the fœtal trunk about its longitudinal axis took place in such a way that the back glided past the promontorium;* the leg which at first lay back in the os sacrum cavity therefore *always* passed over *the longer way* through the pelvis, in order to get in front behind the symphysis—*never* the shorter way through that half of the pelvis in which the back was immediately after version. I would remark here, that all the patients after version was completed were put into the dorsal position, and that the deliveries were accomplished in this position; whether the side position can exercise any influence over the rotation of the fœtus I have not investigated. From my observations, I conclude that the manner of rotation referred to is *probably the only one in accordance with Nature* in cases of incomplete foot presentation with prolapsed posterior leg. If labours of that sort are left to Nature, the pains will always expel the fœtal trunk with the rotation above set forth.

The fact that I have only once met with a distortion of the fœtus also speaks in favour of my hypothesis. In this case (No. 8) the anterior arm was pressed into the neck, and as I had to deal here at the same time with a weakly pulsating prolapsed umbilical cord, which compelled me to hasten the delivery in spite of an insufficiently dilated os, it must be left doubtful whether this was not the cause of the abnormal position of the arm.

Berry Hart has lately written a paper on Internal Rotation,[1] and he says,—"Whatever part of the fœtal head or trunk first strikes a lateral half or lateral part of the sacral segment is rotated internally to the front, and in the direction opposite to the lateral half or lateral part of the segment so acting." Berry Hart does not at all mention the incomplete foot presentation with prolapsed posterior leg, and in his diagrams of rotation I miss the method through the posterior half of the pelvis past the promontorium which I point out. I do not think that the law of rotation given by Berry Hart is right in the above-mentioned foot presentation.

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[1] Berry Hart, "On the Nature and Cause of the Movement of Internal Rotation," *Edinburgh Medical Journal* for May 1886.

An explanation of the somewhat remarkable manner of rotation may be as follows: Through the pressure of the pains being directed downwards and backwards the leading part (*i.e.*, the prolapsed leg and the corresponding half of the breech) moves in the direction where the pelvis offers most room, and consequently least resistance, *i.e.*, in the os sacrum cavity; the scanty space in the antero-lateral part interposes an insuperable obstacle in usual cases (I disregard here immature fœtuses) to the rotation of the back by the shorter way to the symphysis, *i.e.*, through the corresponding half of the pelvis. At the same time as this rotation occurs the leading half-breech, now lying posteriorly, goes *deeper;* the anterior leg, which is bent upwards, finding now resistance in the anterior wall of the pelvis, will force a way, on its part, into the os sacrum cavity: as is universally admitted, the prolapsed, posteriorly-situated leg rotates in consequence to the front till the greatest diameter of the breech sinks into the antero-posterior diameter of outlet of the pelvis. The only exception I have met with to the mechanism of labour here described was in a case of *placenta prævia* in the seventh month of pregnancy, in which I had brought about by combined version an incomplete foot presentation with the posterior leg outstretched; in order to stop the bleeding, something more powerful than usual had to be applied to the leg of the immature fœtus. The rotation did not take place in this case, as the fœtus, after the os was sufficiently dilated, was extracted in the position mentioned. In premature labour the absence of the rotation will be observed somewhat frequently, but this does not militate against the validity of the sentence enunciated above.

I should like to sum up the results gained from my observations in the following sentences:—

It is a matter of absolute indifference which leg is seized in order to accomplish the turning of the fœtus in utero.

If it is intended that the leg which is brought down and outstretched shall lie in front behind the symphysis immediately after version, this result will be attained in the majority of cases when the lower leg (*cp.*, however, p. 611) is brought down in dorso-anterior positions, and when the upper one is brought down (but see p. 610) in dorso-posterior positions.

If, however, there has been produced, through the version, an incomplete foot presentation with the posterior leg outstretched, then this latter will rotate to the front in such a way that the back of the fœtus glides past the promontory.

If it is found necessary in cases of the last kind to complete the delivery, the artificial rotation of the fœtal trunk about its longitudinal axis, so that the outstretched leg comes in front, should be done in the direction indicated above.

To illustrate the observed facts I give here some of the cases; the first eighteen observations have been published in the *Archiv für Gynäkologie*, vol. xxxi., Berlin, 1891.

Case XX., *28th of October* 1891.—W., 33 years of age, iv.-para; twins; first child naturally born in head presentation; second child was situated in second incomplete foot-presentation (the back to the right) with prolapsed presenting posterior (left) leg. I ruptured the membranes; the procident leg fell at once down into the hollow of the os sacrum, and under strong pains the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the prolapsed (left) leg came in front behind the symphysis; the mature living child was naturally born in the first complete foot-presentation.

Case XXI., *3rd of December* 1891.—H., 31 years of age, iii.-para. Liquor amnii escaped thirty-six hours ago, when os incompletely dilated; first breech-position (back to the left). On my arrival I found the breech still at the pelvic brim, and I brought down the posterior (right) leg, which after that was situated in the hollow of the os sacrum. When strong pains came on, the fœtal trunk rotated from the left into the right half of the pelvic cavity with the back gliding past the promontorium, so that the leg down came in front behind the symphysis; as soon as the breech was born I extracted the child with difficulty, caused by the narrow pelvis and the large child (length 55 ctms., circumference of the head 38 ctms.), which was still-born.

Case XXII., *12th of December* 1891.—S., vii.-para, second breech-position (back to the right). Placenta prævia centralis; os dilated to the size of florin. Severe hæmorrhage. I perforated the placenta with two fingers and brought down the posterior (left) leg, which then was situated in the hollow of the os sacrum and fixed by means of a noose, to stop the bleeding. When pains came on the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the outstretched leg came in front behind the symphysis. Six hours later the mature child was naturally born in the first incomplete foot-presentation; child still-born.

Case XXIII., *20th of December* 1891.—G., 29 years of age, iii.-para; second dorso-anterior transverse position (head to the left, breech in fundus, feet in fundus to the left behind) with procident right arm. I placed a noose round the procident arm and brought down the right leg, which after version was situated posteriorly in the hollow of the os sacrum, the back posteriorly to the left. When pains came on the fœtal trunk rotated, on pulling slightly on the prolapsed leg, from the left into the right half of the pelvic cavity with the back gliding past the promontorium, so that the outstretched leg came in front behind the symphysis. Strong pains expelled the living child (length 48 ctms., circumference of the head 33½ ctms.) in the second incomplete foot-presentation.

Case XXIV., *5th of January* 1892.—G., 27 years of age, iv.-para. Twins, first child in second breech-position (back to the right); os dilated to the size of a crown; membranes ruptured six hours ago. I found that the breech had not entered the upper strait of the pelvis, and brought down the left leg, which then was situated posteriorly in the hollow of the os sacrum. When pains came on, the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the outstretched (left) leg came in front behind the symphysis, and the mature, well-developed living child was born in the first incomplete foot-presentation.

Case XXV., *6th of January* 1892.—S., 27 years of age, iv.-para; ninth month of pregnancy; first transverse position; os dilated to the size of half a crown; placenta prævia centralis; profuse hæmorrhage. Bipolar version after Braxton Hicks' method, whilst I pushed two fingers through the placenta near its border and brought down the left leg, which after version was situated posteriorly in the hollow of the os sacrum, the back to the right; the prolapsed leg was fixed by means of a noose to stop bleeding. Under good pains the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the prolapsed leg (the left) came in front behind the symphysis, and the child was expelled two hours later in first complete foot-presentation; child still-born.

Case XXVI., *16th of January* 1892.—A., 34 years of age, vi.-para; ninth month of pregnancy; severe bleeding for two hours; first head position (O.L.A.); os dilated to the size of a florin; placenta prævia lateralis dextra. Bipolar version after Braxton Hicks' method, whilst I ruptured the membranes and brought down that leg I first reached; it was the left, and after version it was situated posteriorly in the hollow of the os sacrum, the back to the right; the prolapsed leg was fixed by means of a noose to stop bleeding. The fœtal trunk rotated under strong pains from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the prolapsed leg came in front behind the symphysis; the living child was born naturally two hours later in the first incomplete foot-presentation.

Case XXVII., *19th of January* 1892.—M., 32 years of age, i.-para. Pains began thirty hours ago. Liquor amnii escaped twelve hours ago; first breech-position (back to the left). In spite of strong pains the breech did not enter the narrow pelvis (spinæ ilii 24, cristæ 25, conjugata externa 17½ ctms.), contraction-ring four fingers above the symphysis. Fœtal heart 180, os fully dilated. I brought down the right leg, which then was situated posteriorly in the hollow of the os sacrum. Under strong pains the fœtal trunk rotated from the left into the right half of the pelvic cavity, so that the (right) procident leg came in front behind the symphysis; the fœtus was then situated in the second incomplete foot-presentation. Since the child was in danger (fœtal heart now 90) I extracted it; from the narrow pelvis the disengaging of the posterior arm was very difficult, and the head was brought through the pelvis by means of energetic pressure from above, and delivered by Mauriceau-Veit's manipulation. The much asphyxiated child (length 49, circumference of the head 34½ ctms.) was resuscitated. A rupture of the perineum nearly to the anus, second degree, was sewn up with silk.

CASE XXVIII., *4th of February* 1892.—N., 32 years of age, vi.-para; pregnant, in the beginning of the eighth month. Severe bleeding for three hours, first breech-position (back to the left); os dilated to the size of a crown; placenta cannot be felt. I brought down the right leg, which then was situated posteriorly in the hollow of the os sacrum. Under a strong pain and under simultaneous pressure upon the fundus the fœtal trunk rotated from the left into the right half of the pelvic cavity with the back gliding past the promontorium, so that the prolapsed leg came in front behind the symphysis. The extraction of the still-born child (length 38½, circumference of the head 27 ctms.) in the second incomplete foot-presentation was very easy. The placenta followed immediately; the third part of its surface was covered with blood-clots; the gap in the membranes was near the border of the placenta.

CASE XXIX., *6th of February* 1892.—H., 32 years of age, iv.-para; pendulous abdomen. Liquor amnii escaped eight hours ago. Fœtal heart 136; os fully dilated; left shoulder presenting, back anterior, head on the right os ilii, breech in the fundus to the left, feet in fundus to the right behind. I brought down the left leg (corresponding to the presenting shoulder); immediately after version the procident leg was situated posteriorly in the hollow of the os sacrum, the back posteriorly to the right. When strong pains came on the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the outstretched prolapsed leg (the left) came in front behind the symphysis; extraction in the first incomplete foot-presentation; the left arm protruded into the vagina in taking down the leg, and was before version placed in a noose. The large child (length 53½, circumference of the head 36½ ctms.) was asphyxiated, but was resuscitated.

CASE XXX., *7th of February* 1892.—F., 27 years of age, iii.-para; eighth month of pregnancy; first transverse position; slight bleeding during the last six days; os dilated to the size of a florin. Placenta prævia centralis. I performed bipolar version after Braxton Hicks' method, whilst I perforated the placenta near its border and brought down the left leg, which after version was situated posteriorly in the hollow of the os sacrum, the back to the right; to prevent bleeding, the prolapsed leg was fixed by means of a noose. When pains came on the fœtal trunk rotated from the right into the left half of the pelvic cavity with the back gliding past the promontorium, so that the prolapsed leg came in front behind the symphysis. Four hours later the living child was born naturally in the first incomplete foot-presentation.

IV.—CARDIAC BRUITS AUDIBLE AT A DISTANCE FROM THE CHEST.

By ALEXANDER M. M'ALDOWIE, M.D., F.R.S.E., Senior Physician to the North Staffordshire Infirmary.

THE following cases form a clinical group of exceptional interest: not only is the loudness of the bruits—their special characteristic—of some rarity, but also their ætiology is uncommon, and, as will be seen, they are linked together in a peculiar manner in both of these clinical features.

CASE I.—William S., aged 37, a single man, was admitted into the North Staffordshire Infirmary in a state of delirium. He was a puddler by trade, but had been a soldier. No history could be obtained from the friends who brought him to the hospital, except that he had suffered from "inflammation of the lungs" for a fortnight, and that prior to that he had always appeared in good health. The cough was slight, without expectoration, but there was great dyspnœa. The respirations were over forty per minute, the pulse rapid and jerking. The tongue was thickly coated and the breath very offensive. The temperature was 101°·4, with profuse diaphoresis. There was complete dulness over the posterior and lateral aspects of the right lung, with fine crepitation and tubular breathing. The impulse of the heart was natural in strength, the apex beat diffused, the area of dulness somewhat enlarged. A very loud systolic murmur was heard, having its greatest intensity over the aortic area and over the anterior part of the right lung. The bruit was transmitted up the carotids, but not round to the axilla. At the apex a normal first sound could be heard. The second sound was normal. The bruit was bellows-like, and was audible about a yard from the chest. The patient's temperature ran up that evening to 104°·2; and he gradually sank, and died three days afterwards with a temperature of 106°. The murmur persisted, although the loudness diminished in a direct ratio to the strength of the heart's action.

At the post-mortem the whole of the right lung was found to be in a state of red hepatization, except the anterior edge and the apex. The left lung was œdematous. There were recent pleuritic adhesions all over the right side, and also a small patch over the middle of the external aspect of the left lung. The heart was slightly dilated, but without much hypertrophy; all the cavities contained fluid blood. The mitral, tricuspid, and pulmonary valves were normal. The lining membrane of the aorta was deep red in colour, and exhibited numerous patches of atheromatous and calcareous degeneration. These pathological conditions were worst near the origin of the vessel, but extended down to its bifurcation, and about an inch along the branches which spring from the arch. Two of the cusps of the aortic valve were thickened, but the valve itself was competent. Extending diagonally upwards from the upper part of the left posterior sinus of Valsalva was a recent rupture of the inner and middle coats about three-quarters of an inch long. The edges were jagged and irregular, and projected into the interior of the vessel. Nothing else of note was found in the body.

CASE II.—Thomas J., aged 28, a crate-maker, had never suffered from rheumatism, scarlet fever, nor any severe ailment till nine months before admission, when he had two attacks of severe pain over the præcordia, with loss of consciousness lasting nearly an hour. These attacks he attributed to domestic grief, and he was quite well in a few days. Two months afterwards he had an acute attack of bronchitis, and when the cough ceased he heard a "cooing" noise in his chest. This sound remained, without any noticeable change, till admission. He suffered much from dyspnœa and occasional pain over the cardiac region. No swelling of the legs. Slight loss of flesh.

Condition on admission.—Patient fairly nourished, no anæmia. Apex beat and heart's impulse invisible in the normal situation; marked epigastric pulsation. Pulsation in the carotids and all the superficial arteries much exaggerated. Very strong diastolic thrill on palpation over the whole anterior and lateral aspects of the chest. Area of dulness on percussion slightly enlarged horizontally, no increased dulness over the aortic arch. A very loud, rough bruit was heard over all the chest, having its maximum intensity at the aortic cartilage. The murmur occupied the place of the second sound,—the first being heard at the apex, normal in character, although exaggerated. The bruit could be heard plainly when standing at the bedside, and could be detected about ten feet from the chest. In the carotids it became a double murmur, —the systolic portion being faint, the diastolic loud and rough.

The patient remained several weeks in the hospital, when he had several attacks of cardiac pain and faintness, but his chief complaint was of the annoyance caused by the continual noise in the chest.

CASE III.—William R., aged 36, a brewer's porter, had always enjoyed good health till two years ago, when he had occasion to lift a heavy cask, and felt a sudden sensation in his chest as if something had snapped. He at once became unconscious, and remained in that condition for twenty-four hours. He has suffered since the injury from great dyspnœa and cough, attended with sanguineous expectoration. He has also been conscious of a continual "cooing" noise in his chest.

On admission he was emaciated and rather anæmic. There was no œdema. Cough not severe; frothy expectoration tinged with bright blood. Great dyspnœa. Cardiac impulse strong and heaving; apex beat half an inch to left of nipple line and between seventh and eighth ribs. Marked epigastric pulsation, and strong pulsation in all the superficial arteries. Pulse rapid, water-hammer. A loud, harsh diastolic bruit was heard over all the cardiac area, having its maximum intensity over the aortic valve, but transmitted to apex, round to axilla, and also up the carotids, where it was audible as a see-saw murmur. The bruit could be heard more than three feet from the patient's body, and was a constant source of annoyance to the patient himself—often, he said, preventing him from dropping off to sleep.

He remained under my care for over two months, and the symptoms abated considerably, but the loud murmur persisted as before.

Remarks.—A fair number of equally loud bruits have been recorded, yet these are all which have fallen under my own observation. It is a curious coincidence that in all the exciting cause appears to have been cardiac overstrain. A predisposing cause doubtless existed in each; in the first case the aorta was found to be much degenerated, in the second there was a history of previous cardiac trouble, while in the third the occupation of the patient was of a nature to induce disease of the circulatory apparatus. The second case forms an interesting link between the other two, the cause being the same as in the first—cough; whilst the resulting lesion resembled that in the third—rupture of one of the semilunar valves, shown by the similar loud, rough diastolic murmur.

In Case I. the loud sound was produced by the projection of the rough edges of the laceration into the blood current, forming fluid veins, as the slight thickening of the cusps of the aortic valve was totally inadequate to account for it. The cough was doubtless the exciting cause of the rupture, but it is possible that a small abrasion of the endothelium (the so-called fatty ulcer) formed the starting-point. That the rupture was recent was proved by the absence of any dissecting aneurism—an invariable sequence of such lesions. The rigidity of the aorta prevented the uniform flow of blood; it was therefore sent in jets against the friable walls, and was certainly an important factor in the production of the laceration. To this loss of elasticity we must also attribute the enlargement of the heart.

Case III. was an undoubted instance of rupture of one of the segments of the aortic valve. The history and symptoms preclude any other explanation of the case. The bruit was transmitted to the apex and towards the left axilla, and Sir B. Forster considers this a sign of rupture of the mitral segment of the aortic valve, but this is highly problematical.

The second case becomes clear by comparison with the others. As in Case I. the cough was no doubt the exciting cause, but the previous history of cardiac pain and fainting showed some pre-existing weakness of the organ. The lesion was either rupture of one of the aortic cusps or cirsoid aneurism of the aorta allowing very free regurgitation. Cirsoid aneurism is excluded by the absence of increased dulness over the ascending portion of the arch, and by the peculiar roughness of the bruit. All authorities state that the diastolic murmur of aortic dilatation, although often loud, is always soft and blowing. The roughness in both these cases was peculiar, giving the impression of a loose flap vibrating in the blood current.

In all the cases the murmur appeared raised in pitch and to have lost its roughness when the ear was removed from contact with the body, having then a soft musical sound. The note was therefore a complex one, and certain elements were inaudible beyond the limit of the chest. To the patients themselves the note was musical; they both described it as like a pigeon cooing. Stokes mentions a case where a gentleman declared that "his entire body was one humming-top."

The clinical significance of these loud bruits is important. They almost invariably indicate serious lesion at the aortic orifice, although Osler relates one which vanished occasionally, and was evidently functional. Speaking generally, the loudness depends to a great measure on the condition of the muscular substance of the heart. A loud systolic murmur shows that the ventricle is acting forcibly, and therefore well nourished. An equally loud diastolic murmur indicates a more serious condition. For in addition to strong ventricular contraction it requires primarily very free regurgitation, and therefore an extreme variation in the blood-pressure during the different phases of the cardiac cycle, with the resulting violent backward current. Auto-audible heart sounds and murmurs are also sometimes dependent on consolidation of the lung, and in Case I. this condition may have contributed to the intensity of the bruit.

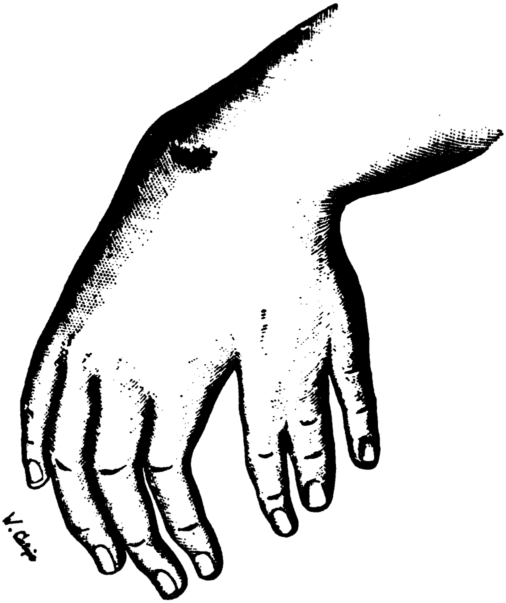
V.—AN INFANT WITH A BIFID HAND.

By J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S.E., Lecturer on Diseases of Infancy and Childhood, Minto House, and on Midwifery and Diseases of Women, Medical College for Women, Edinburgh; Physician for Diseases of Women and Practical Obstetrics, Western Dispensary, Edinburgh; and Secretary to the Edinburgh Obstetrical Society.

(*Read before the Obstetrical Society of Edinburgh, 9th November* 1892.)

I HAVE to-night the honour of exhibiting to this Society an infant with an interesting deformity of the right hand. The subject of the malformation is a male infant, one year and five months old. The mother is nearly 41 years of age, and has given birth to ten full-time living children, and has had two miscarriages; two of the children have died, and the infant exhibited is the youngest of the survivors. The deformity of the right hand was noted at the time of birth by the medical man in attendance. There was no history of any abnormal symptoms during the mother's pregnancy, nor was there any suspicion of a maternal impression. The child was healthy up to the age of five months, when some convulsive attacks occurred, and he was taken into the Sick Children's Hospital; thence he was transferred to the Fever Hospital for varicella, and later he was treated in the Eye Wards of the Royal Infirmary for iritis, etc. He has lost the sight of the right eye. I saw him for the first time at my Children's Clinique in the Cowgate Dispensary a fortnight ago. There were no anomalies of the fingers or toes in the case of any of his brothers or sisters, and there was not in the family history of the mother or father any indication of the occurrence of deformities such as that seen in this infant.

A drawing was made of the deformed hand (*vide* accompanying Figure); but this scarcely conveys a correct impression of its appearances, for in order to sketch it the fingers had to be spread out, whilst their natural position is a partially flexed one. The hand hangs down in a helpless fashion, which reminds one of the "wrist-drop" in lead poisoning cases, and the arm always tends to be pronated and half-flexed at the elbow-joint. There are seven digits, and these are divided into two groups, a radial and an ulnar, by an interdigital sulcus, which is somewhat deeper than any of the others. The ulnar or internal group consists of four digits, each made up of three phalanges; the innermost of these is no doubt the little finger; then follow the ring, middle, and index as one passes towards the radial side of the hand. The thumb is wanting. This group of digits no doubt constitutes the right hand proper of the infant, whilst the fingers on the radial side are supernumerary, and make up the deformity. This radial group consists of three digits, of which that on the radial side is the little finger, whilst the other two are probably the ring and middle fingers. Each has three phalanges, but the ring and middle fingers are webbed in the region of their proximal phalanges. These three fingers are usually flexed upon the other part of the double hand, and the little finger lies under the other two digits. Each of the seven fingers has its own metacarpal bone; and whilst the four members of the ulnar group seem to articulate in the usual way with each other and with the unciform, os magnum, and trapezoid, those of the radial group probably form joints with more than one articular facet on the trapezium, and possibly also with a surface on the lower end of the radius. It does not seem that the carpal bones are increased in number, for the right wrist has the same measurement as the left: each measures 10 cms. in circumference. The lower end of the ulna does not appear to articulate normally with the carpus: a gap is felt, and this shows itself by a deep dimple on the skin surface. The muscles on the flexor aspect of the arm are well developed; those on the extensor aspect are weak.



Bifid Hand. (Natural size.)

In addition to the deformity of the hand there is an abnormal condition of the elbow on the same side. It is not certain whether or not this also was congenital, for the mother first noticed it when the child was about five months old, but in all probability it existed at birth. It seems as if the ulna were dislocated inwards. Distinct creaking is felt at the elbow on moving the forearm, and the child seems to suffer some pain from the manipulation. This elbow measured 16 cms. in circumference, whilst the left measured 15 cms. The other hand and both the feet were normal.

I regard this case as an example of bifidity of the distal segment of the right upper limb, and look upon the seven digits and metacarpal bones as the representatives of two hands—the ulnar group making up one, the radial the other. Both thumbs are absent, and the furthest apart digits are probably the little fingers. In the radial series the index is, no doubt, missing also. It is as if the right and left hands were welded together, the index of the one coming into juxtaposition with the middle finger of the other. The bifidity extends as far as the wrist, but it is doubtful whether it affects the carpus as well as the metacarpus.

Cases similar to the above have seldom been recorded; but three at least have been described which closely resembled it. Taruffi[1] has, indeed, collected four cases of bifid hand (dichirus monopleurus); but one of these, that reported by Ambrosini in Aldrovandi's *Monstrorum Historia*, is of doubtful authenticity, and had better be neglected.

The first well-reported case was that described by J. Jardine Murray[2] in 1862, under the title of "A Case of a Woman with Three Hands." The patient, a healthy married woman, 38 years of age, had one child that showed no abnormality, and, so far as she knew, none of her relatives had had a deformed hand. The left upper limb, which was very muscular, was the part affected; the shoulder was normal; the elbow-joint could be extended, but could not be more than half-flexed, probably from enlargement of the coronoid process of the ulna; and there was a bifid hand. The circumference of this arm, both at elbow and wrist, was greater than that of the right. Pronation and supination were not interfered with. The bifid hand had eight digits, each with three phalanges and a metacarpal bone. The fingers were in two groups, a radial and an ulnar; each group was made up of four digits—index, middle, ring, and little. The thumbs were represented by a slight prominence on the dorsal surface. The radial series of digits constituted the supernumerary hand, and its ring and middle fingers were webbed up to the level of their first phalanges. The radial part of the double hand was somewhat smaller than the ulnar. All the fingers were webbed at their tips. The malformed hand could grasp well, but not so strongly as the right member. Murray believed that the duplicity of bony structure began at the carpus.

A case, apparently very similar to the above, was mentioned by Giraldès in his work on the Surgical Diseases of Children, published in 1868.[3] He operated on the child, a boy, and removed the supernumerary hand; but he does not say on which side of the body the hand was double. There were eight digits in two series, the thumbs were absent, and the fingers were arranged in inverse order, the little fingers being the furthest apart, and the two index digits being in apposition.

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[1] Taruffi (C.), *Storia della Teratologia*, tom. iii. p. 419. Bologna, 1886.

[2] Murray (J. J.), *Medico-Chirurgical Transactions*, vol. xlvi. p. 29. London, 1863.

[3] Giraldès (M.), *Maladies Chirurgicales des Enfants*, p. 42. Paris, 1868.

Fumagalli[1] reported at greater length the case which came under his care. The infant, a female, was fourteen months old. There was no family history of deformity. The right hand was bifid: it possessed eight digits, arranged in two series, a radial and an ulnar; the external or radial group constituted the deformity. There were no indications of thumbs. Each one of the four supernumerary digits was articulated with an incomplete metacarpal bone. There was anchylosis of the elbow-joint of the deformed limb: it was fixed at a right angle. The supernumerary fingers were smaller than the others, and their movements were rather limited. One part of the bifid hand could grasp the other. Fumagalli, after consultation with his colleagues, amputated the supernumerary metacarpals and digits.

The resemblances between these cases and mine were very striking. The only real point of difference was in the number of digits: there were eight fingers in the specimens above noted, and seven in the case of the infant shown to-night. The thumbs were absent in all. The deformity was in every instance unilateral. In three out of the four cases there was partial anchylosis of the elbow-joint of the deformed limb. The ring and middle fingers of the supernumerary hand were webbed in two instances.

The condition may be regarded as a grave form of polydactyly, or it may be looked upon as a separate variety of melomelus. The deformity called melomelus includes all the cases in which a supernumerary limb is attached to the normal member, and there are, according to Taruffi, four varieties of it. In the first the duplicity affects the upper arm (dibrachius); in the second, the forearm (diantibrachius); in the third, the hand (dichirus); and in the fourth, the fingers (polydactylus). My specimen, then, according to this classification, belongs to the variety dichirus monopleurus of the class melomelus of the asymmetrical disomata. The condition in its graver forms is very rare in the human subject; but it appears to be more common in some of the lower animals (calf, pig, ram, frog, lamb, chick, duck, triton, axolotl, etc.). Two or three cases have been reported in which similar conditions were found in the lower limb of the human subject.

VI.—DRUG INTOLERANCE.

By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E.

We are often unpleasantly reminded of the fact, that some individuals are injuriously affected by ordinary medicinal doses of certain drugs. In some such cases the degree of this susceptibility remains constant in the same person, even the smallest dose of certain drugs producing in them toxic effects. In others, again, the degree of susceptibility varies with the state of their body and with the rate of absorption of the drug. At certain times such individuals can take even large doses of particular drugs without injurious effect, while at other times they exhibit great intolerance to the same substances. Again, a dose which produces no harmful effects when taken at periods during which absorption from the stomach is slow, may have an immediately prejudicial action if taken just after a meal, when the absorptive processes are most active. It may be, however, that such drugs have a certain action in modifying the normal processes of digestion, or of so acting on the products of digestion that either before or after absorption they act as irritants, and in this way cause the varying symptoms due to each drug. As yet, however, no very tenable theory has been put forward to explain the reason of idiosyncrasy to drugs. In the meantime, therefore, we can only collect evidence, in the hope that some future investigator may summarize it, and perhaps deduce definite conclusions.

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[1] Fumagalli (C.), "Sulle difformita congenite delle dita," *Annali universali di Medicina*, vol. ccxvi. p. 313. Milano, 1871.

To this end I venture to relate a case which has recently come under my observation, and which appears to me to have some interesting and peculiar features, as well as showing the extreme intolerance the patient manifested to drugs having similar physiological actions.

The patient was a healthy young lady, aged 18 years, of a slightly nervous temperament. In August she had a slight attack of facial neuralgia, to alleviate which I prescribed antipyrin. This was dispensed in 5-grain powders, and she was directed to take one, and another one hour afterwards if the pain were not lessened.

Almost immediately after swallowing the first powder she felt faint, and so sick and giddy that she had to lie down. Within half an hour the skin over the whole of her body was bright scarlet in colour, simulating exactly the rash of scarlatina. Along with this there was a general swelling of the subcutaneous tissue, this being specially marked on the hands, arms, feet, and legs. The œdema was so great over the face that the features soon lost all expression. A diffuse urticarial eruption then appeared over the whole surface of the body, including the face. The wheals were specially numerous on the extremities, and gave rise to intolerable itching. There was a feeling of great distress, and the patient almost fainted on rising from the recumbent position. No new urticarial wheals appeared later than twelve hours after the reception of the drug, though the general erythema lasted for about thirty-six hours, and was followed by a fine powdery desquamation. The subcutaneous œdema gradually subsided, and was gone by the end of the third day.

The toxic effects of antipyrin are usually described as showing themselves in fainting and cyanosis. This may be all, or may be accompanied or followed by an erythema appearing in patches, which are often quite small, and localized, as a rule, to the extensor surfaces of the limbs. This rash is said to resemble closely that of measles, though the spots are more rose-red than purple in colour. The presence of this exanthem may be, and often is, the only symptom present. It is, however, very commonly associated with swelling of the subcutaneous cellular tissue of the face, hands, feet, and scrotum, and with an itchy or pricking sensation in the skin. This is followed in most cases by an eruption of vesicles, which may be so large as to form bullæ, and which are confined, as a rule, to areas immediately surrounding the natural orifices, as the mouth, nose, and anus.

The case I have related differs from most of those recorded in the smallness of the dose of antipyrin giving rise to such aggravated symptoms, 5 grains being almost immediately followed by giddiness and faintness. One case is noted where 1 gramme (= 15½ grains) produced puffiness of the face and the eruption of large blisters. In another 2 grammes (30·86 grains) caused collapse and a vesicular eruption.[1] In the greater number of cases of antipyrin idiosyncrasy the rash only appeared after a relatively large quantity of the drug had been taken. This is shown by two cases narrated by Dr Blomfield, in one of which the erythema did not appear till the thirteenth day of administration of antipyrin, and in the other not till the tenth day—in both, at any rate, not till after more than 100 grains had been taken.[2]

In the character of the eruption my case also showed some peculiarities. Thus there was a general and uniform redness of the skin and swelling of the subcutaneous tissue over the whole body, including the face. The erythema is usually said to be in the form of slightly raised red patches which spare the face. In this case, however, the rash was more marked on the face than elsewhere, and was quite uniform in colour. There was also an entire absence of vesicular eruption or of bullæ, though the presence of these seems almost characteristic of antipyrin poisoning. Vesicles and bullæ are described as occurring on all parts of the body, even on the hard palate or between the toes.[3]

The chief peculiarity, however, lay in the wide distribution of the urticarial wheals. These appeared over the whole surface of the body. The presence of wheals is a rare phenomenon in cases of antipyrin rash, and in those cases where it has occurred the urticaria very quickly disappeared,[1] and seems to have been localized, as in one case, to the legs and abdomen[2]; in another wheals appeared on the body but not on the face.[3] In some cases itching in the skin is the only symptom which antipyrin gives rise to.

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[1] Hahn, Dr F., "Ein Fall von Antipyrin Exanthem," *Centralblatt f. Klin. Med.*, 1889, No. 49, x. p. 849.

[2] Blomfield, "Two Cases of Antipyrin Rash," *Practitioner*, 1886, xxxvi. p. 261.

[3] Veiel, "Ein Seltener Fall von Blasenausschlag in Folge von Antipyrin," *Arch. f. Dermat. und Syphil.*, Wien, 1891, Bd. xxiii. p. 33.

At the end of October the patient had another slight attack of facial neuralgia, to relieve which she took a 1-grain powder of sulphate of quinine. A few minutes afterwards she felt sick and fainted. I was sent for, and on arriving—about an hour after she had taken the quinine—learned that she had fainted three times on trying to rise in order to get her clothes removed. She was in bed, and presented an appearance very similar to that caused by the antipyrin. The breathing was natural, pulse 112, and temperature 99°·6 F. Over the whole body there was a bright red rash. The individual papillæ of the skin were enlarged and congested, and the skin felt dry and hot. As before, the subcutaneous tissue was infiltrated, giving a swollen appearance to the face, and on the body and extremities the skin pitted on pressure and remained for a time white. A continuous crop of urticaria came out over the whole skin surface. Though each wheal individually lasted but a short time, so many appeared that the nettle-rash persisted for several hours. There was no vesicular eruption present, though I carefully looked for it. On attempting to raise her from the recumbent position, fainting resulted. The urticaria and faintness persisted during the first day, but the erythema and œdema were not entirely gone till three days afterwards. During this interval a fine desquamation of the cuticle took place.

These toxic effects of so small a dose of quinine in the same subject are interesting, as showing the well-marked idiosyncrasy certain individuals show to drugs having somewhat similar actions. It has frequently been observed that some persons are most intolerant at certain times to the action of even minute doses of quinine. Dr Burney Yeo[4] has described the symptoms produced in himself by a dose of one-quarter of a grain of pure sulphate of quinine taken after breakfast. The effects seem to be most marked if the drug be taken shortly after a meal, as it was in the case I have narrated, where the patient took the quinine immediately after tea; as also in a case related by Prof. Glax, where a rash appeared, with swelling and tenderness of the joints, after 1½ grains had been taken.[5]

In most of the cases of quinine rash the erythema is described as being patchy and so localized, that in many cases it never reaches above the groins. Dr Farquharson[6] states that the rash is usually measly in character, though occasionally papular, and then resembles that variety of urticaria which occurs in discrete rose-red patches over the skin. This is commonly accompanied by a vesicular eruption. My case differs in the erythema being uniform and general (though a few cases are described as showing this), in the absence of vesicles, and in the presence of the diffuse urticaria. A few cases are recorded of nettle-rash appearing after the administration of quinine, but I have not met with any described as showing diffuse erythema together with widespread urticaria.

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[1] Rauk, *Deutsch. Med. Wochenschr.*, 1884, No. 24.

[2] Sturge, *Brit. Med. Journ.*, Feb. 4, 1888.

[3] M'Donald, *Brit. Med. Journ.*, Feb. 11, 1888.

[4] *Transactions Clin. Soc. London*, 1888–9, xxii. p. 193; or *Lancet*, March 16, 1889, p. 533.

[5] Glax, *Lancet*, Jan. 17, 1891, p. 157.

[6] Farquharson, *Brit. Med. Journ.*, Feb. 15 and 22, 1879.

These exanthematic rashes appear to occur most frequently in women, and seem to have no relation to the quantity of the drug taken, as in some instances they do not appear till after the administration of large quantities, while in others the smallest dose gives rise to toxic effects.

VII.—SOME ETIOLOGICAL AND THERAPEUTIC OBSERVATIONS IN CONNEXION WITH BRONCHIAL ASTHMA: AN ADDRESS DELIVERED AT THE FIFTH SWEDISH GENERAL MEDICAL CONFERENCE, SEPTEMBER 1891.

By Dr O. TORSTENSSON.

Translated by E. E. N. Translation revised by Dr WILLIAM ELDER, Leith.

FEW illnesses have had so many different opinions expressed with regard to their origin as bronchial asthma; even medical writers are not certain yet if the opinions they have promulgated are correct. As I have, within a short period, had opportunity of treating 400 cases of this illness, partly in my own private practice and partly at the hydropathic establishment at Mösseberg, of which I have charge in summer, I have been able to make observations as to its cause as well as its treatment. I therefore venture to occupy part of the time of the Conference with some remarks on the subject in question.

First, let me notice historically the development of opinion regarding it. Although this complaint existed in olden time, as we find Hippocrates, Celsus, and Aretæus make mention of it, it was not then understood to be a different form of disease from other kinds of asthma. Only when physiological diagnosis came to be understood—*i.e.*, in the time of Auenbruggerer and Lænnec—was this the case. Lænnec, who could not with his stethoscope find the specific cause of this peculiar illness, declared that it was produced by disorders in the nerves from unknown causes. Andral considered that it was caused by abnormal irritability in the vagi and phrenic nerves; that it could be caused by pressure of a bronchial gland on one of these nerves, and in one case he had found this to be the case. Several writers have more recently believed the cause to be irritation of the bronchial mucous membrane by certain crystals discovered in the asthma sputum by Charcot and Leyden. But in addition to the fact that Zenker and others have shown that such formations occur in what is coughed up from the bronchi without asthma being present, and even in prostatic secretions, Berkart directs our attention to the fact that similar crystals occur in equally great numbers before and after the attack, and therefore they cannot possibly be regarded as its cause. Prof. See, one of the most celebrated physicians in France, who has paid much attention to asthma therapeutics, declares the illness to be a neurosis of the vagus, accompanied by, but never caused by, organic injury; and its chief symptoms to be bronchial exudations, tetanus of the diaphragm, and emphysema. Brügelman, who in the second edition of his pamphlet is, so far as I know, the last who has written fully about bronchial asthma, thinks it is caused by irritation of the central nervous system, through spots that are specially susceptible to such irritations, which may be situated as well in the upper part of the back of the pharynx as in other parts of the body; and in order that the disease may be produced, there must be a specific tendency thereto in the individual. Very much the same views are expressed by Berkart in the large work published on this complaint last year.

All these views, however, are too vague to be of real use therapeutically. In the beginning of the decade of 1870, several doctors came to be of opinion that asthma was caused by pressure on the nerves branching off from the upper air-passages. Frœnkel considered hypertrophy of the tonsils to be the cause, as he often found them associated, and by extirpating these in several cases he effected a cure. Voltolini, about this time, noticed one case of asthma which disappeared after the removal of a polypus of the nose. Others, on the other hand, found that an attack of asthma sometimes took place immediately after a similar operation. Consequently, the uncertainty as to the real cause was great. Hack was without doubt the first who, in the beginning of the last decade, carefully studied the connexion between asthma and other neuroses and new formations in the cavities of the nose, and he is (in my opinion) the one who has come nearest the truth. He believed that a hypertrophied spongy formation, situated on the lower turbinated bones, caused asthma by the irritation which it produced on the nerves there. He was indeed successful in producing a cure by diminishing these hypertrophies by means of the galvano-cautery. His writings caused much sensation in the medical world; and as several other neuroses as well as neuralgias were cured by him successfully by the same means, the inner part of the nose was soon regarded by some physicians as part of the human frame which ought most carefully to be examined. As a consequence of this, the odour of singed human flesh hovered almost constantly about their reception-rooms, but especially those of nasal specialists. It was, therefore, not long before a reaction took place, and nasal therapeutics went too far to the other side; there it stands to-day with few exceptions.

As I have already mentioned, I have had opportunities during the last few years of studying this complaint, as every summer many cases of asthma come to Mösseberg. That asthma is connected with an inactive state of the skin I soon found, as in several cases when there were symptoms of nasal catarrh slight attacks of asthma followed, and very severe attacks of asthma began with these symptoms. I was also successful in curing several slight cases of asthma by strengthening the skin, and making it less susceptible by means of baths. Most cases, were, however, more stubborn. Even after I had, according to Hack's method, diminished the slightest swelling of the lower turbinated bones by the galvano-cautery, I was obliged to let patients leave me without receiving any real relief.

I then began to examine the inner parts of the nose, and especially its upper back cavities, in persons of perfect health as well as in those suffering from asthma, and found then that in every case where the person was suffering from asthma, no matter in what state the mucous membrane of the nose was, the superior turbinated, and sometimes also the middle turbinated, were swollen, so as to come close to the septum. It appears to me, therefore, clear that if the turbinated bones were increased in volume still more through acute catarrh or external local irritants, pressure must occur on the upper region of the septum, and on the many nerve fibres which through the nose ganglia anastomose with the vagus nerve. It has been found, especially quite lately by Lasarus in Berlin, through experiments, that by irritating the central points of this nerve an attack of bronchial cramp may be produced. It is not difficult, therefore, to conclude that pressure which has arisen in the manner already mentioned produces irritation, and accordingly an attack of asthma. It is very easy to produce an attack by applying mechanical irritation to the region above mentioned in persons who suffer, or have formerly suffered, from breathlessness. Thus some days ago I introduced a probe with a round ball at its tip into the nose of a person who had been cured of asthma from which he had suffered several years, and caused pressure between the superior turbinated bone and partition wall, a severe attack of sneezing was the result, followed by a fully typical attack of asthma, which was increased when I made a similar manipulation on the other cavity. Only after I had thoroughly anæsthetized the parts with cocaine did the attack cease, leaving, however, for about half a day a feeling of oppression on the chest. When, however, similar pressure was exercised on the lower turbinated, back of nose, and palate in the same way, no spasm occurred in the chest. It would, therefore, appear to me that only the branches of nerves which lie in the upper part of the septum have an influence on the bronchial muscles.

I had another proof of the correctness of this theory a short time ago, when I, "experimenti causa," after previous agreement, laid a small roll of cotton-wool, well pressed together, between the upper turbinated bone and septum of a person who had never suffered from bronchial asthma, but who was subject to chronic nasal catarrh, between whose superior turbinated and septum there still existed a space. Nothing transpired for some time, and the region of the nose did not seem particularly sensitive when the wool was put into it, so that I did not think sufficient irritation had been produced on the nerves. However, after a few hours the person returned to me manifesting all the symptoms of asthma. I cannot say whether in persons whose noses are quite healthy an irritation of this kind can produce an attack of asthma. Hitherto it has appeared to me that there must be an extra-sensitiveness produced by chronic catarrh of the mucous membrane, which affects the nerves embedded in it.

I also wish to mention that I have seen several cases of asthma only on one side,—a form of this complaint I have not seen mentioned before by any medical writer. In these cases the lung which answered to the side of the nose where the superior or middle turbinated was enlarged near the septum, manifested the signs of bronchial spasm with exudation so long as the attack lasted, while in the other nostril, where there existed a space between these bones and the septum, the lung was altogether free from symptoms of disease.

No more hesitation need therefore remain as to the cause of bronchial asthma, more especially as the therapeutics I have made use of as the result of my views on this subject have had the happy result, *that I cannot remember a single case where the aforementioned condition existed in the upper inner nasal region, which has not either been completely cured or so far relieved* that when there has been a return of asthma the attack has only resembled a gentle swell after a great storm has passed away. The latter cases have been such that either the upper inner cavities of the nose have been so narrow, or the septum so located towards one side, that sufficient space between it and the turbinated bone could not be produced; or, lastly, that the irritability of the nerves in the upper region of the septum have become so great through chronic catarrhs, that even a local astringent and roborating treatment has not been sufficient to fully remove it, so that when outside influences produce irritation, the symptoms mentioned above have been the result.

I am unable, without trying too much the patience of my colleagues present, to enter fully into the diagnosis of the disease. I will, therefore, only make a few remarks about the subject, using one or two concrete examples as starting-points.

I separate the acute febrile attacks of asthma connected with colds in the head from those which appear without the temperature of the body being heightened, and which are caused by local irritation in the upper region of the septum, and also from those where oppression is felt in the chest caused by lying on the back at night, which is also accompanied by a rattling in the bronchi and severe cough.

The first form of asthma commences generally with pain in the limbs and slight shivering, accompanied by discharge from the nose, together with stoppage when the fever rises to 38° or 39° C. This nasal catarrh is soon followed by more or less laboured breathing, accompanied by wheezing in the lungs and a trying cough. To begin with, the expectoration is transparent and watery, resembling white of egg, but changes gradually to a "sputum cœlum," whilst the asthma diminishes and expectoration is easier. Even after the attack of asthma is over the cough and expectoration continue a longer or shorter period. Were one to examine the inside of the nose carefully at the beginning of the attack, a general œdematous reddish swelling would be seen in the whole cavity, and one or both of the superior turbinated bones would be so firmly pressed against the septum that one could not without injuring the mucous membrane press a probe up between them. After the attack is past the volume of the superior turbinated has so far decreased that this manipulation is no longer difficult, although no visible space can be seen between it and the septum.

The emphysema of the lungs, about which so much has been said in connexion with asthma, appears to me of less importance than what pathologists in general think. At least, I have seen hundreds of cases of asthma where there has not been the least resemblance to emphysema, or it has existed in so slight a degree that no inconvenience could be caused by it. Of the many cases of acute asthma which have been under my care, I will only give one as an example, as I regard it as rather a typical one, and so select it the more willingly. A landed proprietor, who owned large estates in the west of Sweden, but was a German by birth, had during several years suffered at intervals from bronchitis, which during the last years almost always returned when he attempted to go out into the open air, in consequence of which he was obliged to keep indoors all winter, and yet was unable to avoid catching cold and suffering several times during the winter from nasal catarrh, fever, and great difficulty of breathing, wheezing in the lungs, and the expectoration before referred to. It was only by smoking stramonium leaves and taking internally iodide of potassium and opium that he could alleviate the attacks. In the spring of 1886 he asked me if I thought Mösseberg would be a suitable watering-place for him to come to. From his description of his case I understood that he suffered from the ordinary form of asthma, and therefore gave an affirmative answer. His own physician, however, did not approve of his going there, and considered that hydropathic treatment in his case would be dangerous, and advised him to go to Ems. Though he drank and inhaled Ems water, and felt well when there, he had a severe attack of asthma the day after his return home. Without having half recovered from this he travelled, without consulting his physician, to Mösseberg. When his chest was examined a mucous rattle was heard more or less throughout both lungs; he experienced difficulty of breathing, and coughed up quantities of opaque expectoration; the temperature was normal, and both superior turbinates lying near the septum. The mucous membrane of the nose was pale and œdematous, and there was much discharge. The patient perspired on the least exertion, was pale and thin, but otherwise well.

After six or seven weeks of bathing and receiving local treatment, he was able to be out all winter with the exception of a few days. During these he suffered from only slight attacks of asthma. The following summer he continued his cure at Mösseberg, with the happy result that ever after he has been quite free from his old complaint even when he has caught cold.

The other form of asthma I can best describe by giving the following example, as it resembles in its chief traits many similar cases I have had under my care:—A middle aged man from the central provinces of Sweden, whose parents had been healthy and who had been healthy himself, and above all had no neurotic tendency, but whose skin was not in an active state, so that he easily perspired when he exerted himself, became ill in the spring of 1887 with a severe catarrh of the nose and larynx, which lasted several days. This was followed by a cough with copious expectoration, especially at night. He suffered also from very severe and prolonged attacks of coughing during the night. Oppression was felt in the chest and loud wheezing in the trachea heard, as soon as the patient tried to lie down. The cough continued all the following summer, and the discharge from the nose was great. In the autumn he began to feel it difficult to breathe through his nose at night, and when he attempted to move during the day breathlessness was the result. This breathlessness increased and became so troublesome, that when the patient tried to walk ever so little, especially in the afternoons, the difficulty of breathing became very great and soon produced a formal attack of asthma, so that he could with difficulty get back home to deaden the attack, by pushing up his nose a piece of cotton wool previously saturated with a strong solution of cocaine. The following winter he consulted several physicians, who told him he suffered from chronic bronchitis with emphysema. Besides the ordinary expectorants which were prescribed for him, the sidesof his throat were pencilled with a solution of lunar caustic as they were found to be swollen. His cough was, however, only mitigated by this treatment, the asthma remained the same, consequently he travelled

in the spring of 1888 to Copenhagen, and let a specialist in the treatment of nose diseases burn away his inferior turbinated bodies with an electro-cautery. No improvement, however, resulted from this. After this he came to Mösseberg, where his superior turbinated bodies were found to be lying close to the septum, as is usual in asthmatics. In the mornings, after he had walked rather fast up a hill, or had exposed himself unwisely to the fumes of sulphurous acid, they became swollen and exerted a pressure on the upper region of the septum, in consequence of which an attack of asthma soon followed, which could only be removed by cocaine and rest. As the patient perspired copiously after the least exertion, baths, etc., were ordered with the object of strengthening the action of the skin, after which the superior turbinated bodies were treated, as will soon be described. The result of this was that the patient so far recovered that he was able the ensuing winter to follow his profession, in connexion with which he was obliged to go up and down many flights of stairs. In spring, however, signs of asthma reappeared, which made him return to Mösseberg. It was then discovered that a small part of the turbinated still pressed on the septum. After this had received treatment once the signs of asthma fully disappeared, and he remained away the following two winters. Only a slight night cough remains; no signs, besides this, remain of difficulty of breathing, nor can any disease of the lungs be found.

The difference between these two forms of asthma is that no fever and very little bronchial exudation accompany the latter. The lungs are generally quite free an hour after the attack. Whilst the former kind of asthma is, in a subject liable to it, produced by a cold accompanied by acute nasal catarrh, the latter is caused by local irritants, such as the fumes of sulphurous acid, or of ammonia, or much dust,—yes, and even the pollen of plants can cause it, wherefore this kind of asthma often comes on during a stay in the country. It is also apt to be caused when the action of the heart is increased by walking fast, or when anything causes congestion of blood to the head.

The third and least troublesome form of asthma is that which shows itself by a feeling of oppression and wheezing at night, and immediately on waking in the morning. This appears to be the case when the back of the superior turbinated bodies are most swollen, and when a catarrh in the pharynx associated with destruction of the mucous gland in the neighbourhood of the "palato-pharyngeal folds" exists. I have had under my care several patients suffering from this form of asthma, who, when their noses and throats had been well cleared out in the mornings, were quite free of asthma afterwards, only suffering from violent and prolonged attacks of coughing with much expectoration of phlegm resembling white of egg.

I have had under my care cases of asthma from age of 5 to 60.

I have found that the illness does not show preference for either sex except in the last mentioned form, where the males have been found to be greatly in excess of the females. It was formerly thought that asthma and consumption were diseases which could not occur simultaneously. This appears, however, by no means to be the case. I have had under my care several cases of typical nasal asthma, in which numerous bacilli have been discovered in the expectoration. During last summer alone five such cases were under my treatment at Mösseberg.

With regard to the effect of other diseases of the nose on asthma, I may mention that I have occasionally seen a fibrous polypus arising from the upper turbinated bodies cause asthma. On the other hand, I have often found both sides of the nasal cavities filled with gelatinous polypi without asthma resulting at the time. Strange to say, however, after these have been removed asthma has several times appeared. The reason must be, that though the upper turbinateds were diseased, they were by the polypi protected from increasing in volume sufficiently to produce asthma which would otherwise have been caused by dust, vapours, cold air, etc., reaching them, whereas when the polypi were removed they lost this protection.

I have also had under my care cases of asthma where the superior turbinated bodies have been very little enlarged, but the cavity of the nose has been much contracted by the septum having become attached to the remains of the lower turbinated after the latter had been burned with the galvano-cautery, owing to which, by the least congestion of blood to or irritation of the superior turbinated, pressure on the upper region of the septum has been produced. By loosening the adhesions and by suitable dilatation of the lower part of the nose the complaint has been removed.

Lastly, I wish it to be understood that I do not at all mean to say that the cases I have mentioned are the only ones which produce bronchial asthma, more especially as the central parts of the vagus can receive irritation from other parts besides the upper region of the septum; but on this I will lay stress, that among the 400 cases of asthma which I have seen and treated, not one case was seen which I did not find had been caused by pressure on or mechanical irritation of this region.

As I now believed that I had found the cause of the disease, the indications as to how it should be removed were very simple, viz., *by removing the pressure on and irritation of the nerves.* To do this I at first used the galvano-caustic apparatus for diminishing the hypertrophied turbinated bodies, making a scar along the lower side of the middle or superior turbinated, which is visible at the back of the nasal cavity. But when the latter was narrow, or the patient restless, it happened to me as well as to others, that the heated wire touched other parts than the turbinated bodies, and the patients, although I had anæsthetized the interior of their noses

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The difference between these two forms of asthma is that no fever and very little bronchial exudation accompany the latter. The lungs are generally quite free an hour after the attack. Whilst the former kind of asthma is, in a subject liable to it, produced by a cold accompanied by acute nasal catarrh, the latter is caused by local irritants, such as the fumes of sulphurous acid, or of ammonia, or much dust,—yes, and even the pollen of plants can cause it, wherefore this kind of asthma often comes on during a stay in the country. It is also apt to be caused when the action of the heart is increased by walking fast, or when anything causes congestion of blood to the head.

The third and least troublesome form of asthma is that which shows itself by a feeling of oppression and wheezing at night, and immediately on waking in the morning. This appears to be the case when the back of the superior turbinated bodies are most swollen, and when a catarrh in the pharynx associated with destruction of the mucous gland in the neighbourhood of the "palato-pharyngeal folds" exists. I have had under my care several patients suffering from this form of asthma, who, when their noses and throats had been well cleared out in the mornings, were quite free of asthma afterwards, only suffering from violent and prolonged attacks of coughing with much expectoration of phlegm resembling white of egg.

I have had under my care cases of asthma from age of 5 to 60.

I have found that the illness does not show preference for either sex except in the last mentioned form, where the males have been found to be greatly in excess of the females. It was formerly thought that asthma and consumption were diseases which could not occur simultaneously. This appears, however, by no means to be the case. I have had under my care several cases of typical nasal asthma, in which numerous bacilli have been discovered in the expectoration. During last summer alone five such cases were under my treatment at Mösseberg.

With regard to the effect of other diseases of the nose on asthma, I may mention that I have occasionally seen a fibrous polypus arising from the upper turbinated bodies cause asthma. On the other hand, I have often found both sides of the nasal cavities filled with gelatinous polypi without asthma resulting at the time. Strange to say, however, after these have been removed asthma has several times appeared. The reason must be, that though the upper turbinateds were diseased, they were by the polypi protected from increasing in volume sufficiently to produce asthma which would otherwise have been caused by dust, vapours, cold air, etc., reaching them, whereas when the polypi were removed they lost this protection.

I have also had under my care cases of asthma where the superior turbinated bodies have been very little enlarged, but the cavity of the nose has been much contracted by the septum having become attached to the remains of the lower turbinated after the latter had been burned with the galvano-cautery, owing to which, by the least congestion of blood to or irritation of the superior turbinated, pressure on the upper region of the septum has been produced. By loosening the adhesions and by suitable dilatation of the lower part of the nose the complaint has been removed.

Lastly, I wish it to be understood that I do not at all mean to say that the cases I have mentioned are the only ones which produce bronchial asthma, more especially as the central parts of the vagus can receive irritation from other parts besides the upper region of the septum; but on this I will lay stress, that among the 400 cases of asthma which I have seen and treated, not one case was seen which I did not find had been caused by pressure on or mechanical irritation of this region.

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with cocaine, dreaded the burning. I soon began to use chromic acid,—an acid I had often used some twenty or thirty years ago in the treatment of ulcerations of the "cervix uteri." As I found that the method hitherto used in applying this was not practicable for the purpose, viz., by fixing heated crystals to the point of the probe, as bits of the acid easily fell off, and its power of cauterizing was reduced by too great heat, I ordered an instrument-maker to construct for me probes of silver with hollow balls at the end, into which the chromic acid is inserted. I have since used such probes of different sizes, and have always found them highly satisfactory. The chromic acid causes a well-defined burnt crust to form, which drops off after three or four days, after which another cauterization of the diseased part can take place until the turbinated has become sufficiently diminished. After the cauterization has been performed, the superfluous loosely-lying chromic acid is removed with a little cotton-wool, after which the nose is tamponed with the same for several hours. Between the cauterizations the interior of the nose is kept in a healthy state by the use of antiseptic sprays.

I have not found that chromic acid produces bleeding or other inconvenience, only now and then vomiting has supervened when much cauterization has been necessary, or after the first application in very sensitive persons. At one time I used tri-chlor-acetic acid in place of chromic acid, but I found this more difficult to fasten on the head of the probe; and as it was in no way to be preferred, I returned to the use of chromic acid. I have generally found it sufficient to cauterize five or six times in order to effect a cure. Very often after the first cauterization has taken place an attack of asthma follows, which is caused by the reactionary swelling after the burning of the turbinated bodies, which consequently presses on the septum.

In order to make the nerves of the nose less irritable, I have always combined with the local treatment a sedative and nerve-strengthening one, as well as hydropathic treatment of the skin, in order to make it more active. Small quantities of iodide of potassium have also been given internally. A hand-spray has also been used for the nose, containing a solution of aceto-tartras aluminicus and resorcin. As the skin and nerves are most readily strengthened by the use of a methodical water-cure, I always advise my asthma patients to come to me at Mösseberg, and I have distinctly observed that those who have received treatment there are better guaranteed against returns of asthma than those who had been treated in my private practice.

Before closing I wish to say, that where there is oppression of the chest, which I have described as coming on at night and connected with loud wheezing in the trachea, and with a severe cough much resembling whooping-cough, and generally combined with swelling of the sides and the back wall of the pharynx, these have required to be pencilled with a solution of nitrate of silver, whilst the turbinates received the treatment already mentioned, in order that all the symptoms should be removed.

To allay the attacks of asthma I have used the treatment ordinarily employed in asthma therapeutics, viz., in severe attacks an injection of morphia, otherwise iodide of potassium with chloral hydrate taken internally. The smoking of stramonium and burning of nitrate paper have also been made use of. Cocaine and pencilling of the nose with menthol have also been employed. Besides these, I have experimented with all kinds of new medicines recommended in journals for asthma, but without any satisfactory results.

VIII.—HÆMORRHAGE FROM THE ALVEOLI CHECKED BY PUFF-BALL (*Lycoperdon giganteum*).

By W. Ramsay Smith, M.B., C.M., B.Sc. Edinburgh.

A man, 72 years old, suffering from lymphadenoma associated with hæmorrhage from the alveoli, came under my care in August last. The hæmorrhage had occurred periodically at intervals of three weeks or a month, and had, on four or five occasions, been very profuse, lasting sometimes for eight days, and weakening the patient excessively. Ordinary styptics had proved useless. Having read Whitla's experiences of puff-ball (*Lycoperdon giganteum*) as a hæmostatic, I procured some of this material, and determined to use it should bleeding occur when the case was under my care. While waiting, I thought it might be useful to experiment in other cases of bleeding in order to gain experience in the manner of employing the substance, and this I did. One case tested it fairly well. After removal of a crushed nail of a great toe there was great hæmorrhage. I took a thin slice of puff-ball, and with it I covered the nail-bed and the point and sides of the toe. The result was that no blood came through the dressing. Other cases proved just as satisfactory—one was a case of severe epistaxis—and after waiting for a week or two I had my opportunity of trying puff-ball in the case I have mentioned at the beginning of this note.

The case, as I have said, was one of lymphadenoma with several complications, one of which was great and periodical hæmorrhage from the alveoli and gums. The teeth were bad, at least their necks and fangs were, and the gums had receded a great deal from them. Add to this that the patient was an inveterate smoker, and used a considerable amount of suction in this, his favourite occupation, and any one conversant with hæmorrhage from the jaws will readily grant that the case was an eminently favourable one for testing the powers and properties of a new hæmostatic. Bleeding had been going on for some hours before

I was summoned. I found blood welling from the alveoli of the teeth on the right side of the upper jaw, all the way from back to front. I had prepared the puff-ball by cutting it into thin slices, and these I packed along the sides of the gums and teeth, and then finished up by making a complete enclosure for the teeth. The stuff stuck well, and no bleeding took place through it that day. Next morning, however, I found that the slices along the inner border had come away, and bleeding had again set in. The patient had found great difficulty in keeping his tongue away from the foreign body in his mouth, and he complained of the difficulty of eating with puff-ball surrounding his teeth and gums. So I removed the packing and commenced work on a more thorough plan. With the help of a probe I packed the puff-ball into the spaces between the teeth until they were quite filled with it. By the time I had finished, bleeding had set in from the alveoli of some of the teeth on the left side and in front. These I packed after the same manner, and I found that this packing was sufficient. The outer, inner, and inferior surfaces of the teeth were left perfectly free, and I had the satisfaction of finding that not a drop of blood came through the packing, although the patient ate, drank, and smoked as usual. There was no recurrence of the hæmorrhage.

From my experience in these and other cases I should never hesitate to try puff-ball in the very worst cases of bleeding, so admirably does it appear to act. I am not prepared to advance any theory as to how it acts; this is a subject for further research.

Part Second.

REVIEWS.

Vaccination and Small-pox in England and other Countries, showing that Compulsory Revaccination is Necessary. By EDWARD J. EDWARDES, M.D. Lond. London: J. & A. Churchill: 1892.

THIS useful little pamphlet contains a concise and powerful statement of the present state of knowledge regarding vaccination and small-pox in Europe, and the necessity for compulsory revaccination. The author first admits that epidemics of small-pox still occur, that syphilis has been transferred by vaccination, that more *adults* die of small-pox since vaccination was vigorously enforced, that great improvements in sanitation have been made during the present century, and then goes on to give specimens of the statistical evidence in favour of vaccination. He premises that the protection conferred by small-pox itself is not absolute, and supports his argument, in the first place, by the practically unanimous personal experience of experts and the medical profession that vaccination protects from small-pox. Second, examples are given showing that a remarkable fall in small-pox prevalence and mortality ensued upon the introduction of vaccination, and that this fall coincides with increased stringency of the vaccination laws of various countries. Third, the incidence and fatality of small-pox among vaccinated and unvaccinated respectively are illustrated by extracts from Dr Barry's Report on the Sheffield Small-pox Epidemic of 1887–8, which showed that the vaccinated enjoyed a six-fold immunity from attack and a 68-fold security against death as compared with the unvaccinated. When the vaccinated and unvaccinated are divided into age-classes, the vaccinated under 10 years of age enjoyed a 20-fold immunity from attack and a 480-fold security against death as compared with the unvaccinated under ten. In invaded houses, only 1·1 per cent. of the vaccinated died, while 37·2 per cent. of the unvaccinated died. Attendants in small-pox cases, soldiers, police, and postmen, who had been successfully revaccinated, escaped attack in Sheffield, showing that revaccination affords protection against small-pox equal to that given by small-pox itself. Fourth, well vaccinated countries are contrasted with badly vaccinated countries, cities with cities, and armies with armies,—the German Statistics, 1884, being cited to show the remarkable diminution of small-pox prevalence and mortality in the country as a whole, in its cities, and in its army since the law enforcing compulsory revaccination was passed in 1874.

The author next devotes a chapter to the objections to these vaccination statistics, in which Körösi's exposure of Keller finds a place. These he refutes one by one. He then proves by logical methods that the reduction of small-pox mortality since vaccination is due to vaccination, and passes on to the nature and extent of the risks attending vaccination, adopting Koch's view that only syphilis and erysipelas require to be mentioned. Dr Creighton's views as to "the terrible characters inherent in the cowpox vesicle" are dismissed as "all imaginary."

The author next shows that revaccination is necessary, because primary vaccination shifts the incidence of small-pox from children to persons of later ages. "There is a natural rise of susceptibility to all diseases in the third quinquennium of life." Natural small-pox is most fatal in infancy; the fatality sinks up to between ten and fifteen years of age; and after this it rises again with the age. "Revaccination is necessary ten years after primary vaccination." That it should be compulsory is shown by the experience of Germany. "The vaccination of the army was not altered in the least by the law of 1874, and yet small-pox mortality in the army, already very low, sinks to nothing when the general population is better vaccinated."

Dr Edwardes is to be congratulated on the ability and clearness with which he has presented his readers with a broad view of the whole subject. Though bristling with figures, the work is pleasantly written, and will prove a valuable guide, not only to the general public, but also to members of the profession who lack time to plod through voluminous blue-books.—JOHN B. BUIST.

Annual Report of the Royal Edinburgh Asylum for the Insane for the year 1891.

Crichton Royal Institution, Dumfries, for 1891.

Sixty-Fourth Annual Report of James Murray's Royal Asylum, Perth, 1891.

Report of the Joint Committee of the District Lunacy Board of Glasgow, Govan, and Lanark Lunacy Districts.

The Lawn Hospital for the Insane, Lincoln, Sixty-Third Annual Report for 1891.

Fortieth Report of the Derbyshire County Lunatic Asylum, 1892.

Cumberland and Westmorland Lunatic Asylum, Annual Report for the year 1891.

Public Asylum Dietaries: Ought they not to be more varied? By J. A. CAMPBELL, M.D., F.R.S.E., Medical Superintendent, Counties Asylum, Carlisle. Lewes, 1892.

Remarks on Pneumonia. By J. A. CAMPBELL, M.D., etc., Carlisle, 1892.

THOUGH Annual Reports mainly interest those who have the charge and management of asylums, or are specially engaged in the treatment of lunacy, useful lessons and instructive remarks may now and then be extracted from them. There is always something racy in the *Reports of the Royal Edinburgh Asylum.* Dr Clouston makes the facts cry out, and intersperses them with pithy remarks. We observe "that there can be no doubt that but for the boarding out of quiet and incurable cases by the two Edinburgh parishes, we should long ago have been so overcrowded by chronic cases that we should have been unable to admit all the new cases from our district." In 1881 St Cuthbert's parish had only 26 cases boarded out; now it has 258. Altogether there are about 350 cases boarded out from our district. Whatever other advantages this method of caring for the chronic harmless insane, who are paid for out of the rates, has, it undeniably has this economical result, that no capital is sunk in providing asylum accommodation for them. In this way something like £50,000 has been saved to the ratepayers of Edinburgh.

In the preceding Report Dr Clouston observed that the epidemic of influenza of 1889 "left the European world's nerves and spirits in a far worse state than it found them." He is now sure of this "for the testimony from every European country and from

America on this point is unanimous. But the depression to which I then referred is not the only mental sequence and concomitant of the disease. A sense of weariness and exhaustion, an incapacity to think consecutively or to exercise the will vigorously, irritability, difficulties of speech, unfounded fears, hallucinations of sight and hearing, illusions, nightmare, and vivid dreams that left unreal beliefs for a time on awaking, and real insane delusions, were all met with in different cases among the staff. That the influenza poison has a special affinity for the brain is now regarded as certain, and in this epidemic the nervous and mental symptoms were even more marked than in the previous one."

The senior assistant at Morningside, Dr Robertson, went to Paris and studied hypnotism under Charcot at the Salpetrière, and then proceeded to Nancy to observe what Bernheim was doing. The results he obtained in trying hypnotism in Morningside are modest when compared with the startling recoveries claimed by some physicians in France. Dr Robertson was able to allay the fear and remove the fancies and hypochondriacal notions of some of his patients, to get them to take medicine, which they would not do when awake, and in a few cases to induce a calm sleep, which otherwise could not be obtained by large doses of powerful hypnotic drugs. Like others who have tried it, Dr Robertson found the insane very difficult to hypnotise. He has not noticed any injury from the use of hypnotism. Dr Robertson accounts for the disparity in the results by the fact, that "the steady and unexcitable Scotch brain does not give way to the functional hysterical disorders so common in Paris, especially among women. This is the material from which the Continental hypnotist has elicited his most extraordinary results and his most brilliant 'cures.' It is a soil that, especially by a little artificial cultivation, will produce a wonderful crop of disease, and a striking harvest of recovery, to the painstaking husbandman. If we cannot flatter ourselves, he goes on, with the glorious record of almost supernatural cures by hypnotism from certain diseases, we at least have the satisfaction of knowing that such diseases needing such cures do not exist to any extent among us."

The total number of patients treated in the Morningside Asylum during the year 1891 was 1191, the daily average was 830. The number of recoveries was 133, a recovery rate of 36 per cent. on the admissions. The number of deaths was 114=13·8 on the average number resident, and 9·6 on the total number under treatment.

In the Crichton Institution the total member of patients was 1229; the daily average was 841. The number of recoveries was 161=38 per cent. on the admissions; the number of deaths was 78, being 9·1 on the average number resident, and 6·34 on the total number under treatment. We are pleased to learn that this beautiful asylum continues to attract patients not only from Scotland, but from the sister kingdoms and from the colonies.

In the Murray Royal Asylum the number under treatment was 147; the daily average 107; 29 were discharged, how far improved is not stated. The number of deaths was 12, being 11·2 on the average number, and 8·1 on the total number treated.

While the Morningside and Crichton Asylums receive patients both from the pauper and wealthier classes, the patients in the Royal Murray Asylum come exclusively from the latter class. A comparison by statistics would therefore be to some extent fallacious.

Dr Urquhart remarks, "No doubt there are ample grounds for the oft-repeated advice urging the early treatment of insanity; but there always will be a residuum of cases that no treatment, however prompt and energetic, can benefit. It is apparent that the greater proportion of recoveries in pauper institutions results from the more favourable chance of cure in the evanescent insanities, necessarily brought under immediate asylum treatment in the lower strata of society, the statistics of which are unfortunately lost to medical science in the private records of family physicians attending the upper and middle classes. This is made manifest to us by the number of patients for whom application for admission is first made and afterwards withdrawn owing to their having recovered, wholly or partially, at home."

This passage opens some questions which we have scarcely time to discuss. The early treatment of insanity is always advisable, but the assumption so often made by asylum superintendents, that they could have dealt successfully with many of their patients had they come in a little earlier, has always appeared to us a statement liable to many exceptions. They have no peculiar medical treatment for the insane, unless introducing the patient to an establishment containing hundreds of lunatics be thought beneficial.

We hope soon to hear of the completion of Dr Campbell Clark's new Asylum at Shotts. In his present place at Kirklands, his death-rate has been low, 7·31, though not so low as it has been several times. The recovery rate was 41·8.

The Annual Report of the Lincoln Lunatic Hospital is signed by the chairman. This is assuredly not owing to any want of ability on the part of the medical superintendent, Dr A. P. Russell. The daily average of patients was 60, 24 males and 36 females. There were 3 deaths, all in persons above 70 years of age. There were 15 admissions: 3 males and 6 females were discharged recovered. This is a highly satisfactory record. The Commissioners in Lunacy remark that the accommodation here is decidedly good for the payments made, and we think that the Hospital only requires to be wider known for the benefits to be more generally appreciated.

Dr Lindsay's recovery rate at the Derbyshire Asylum is 45 per cent., which is over 6 per cent. the average rate in the English Asylums. The death-rate was 13 per cent. to the daily average number resident, and 10·25 on the total number under care. Dr Lindsay tells us that amongst his admissions there was an idiot boy of six years of age. It is to be regretted that Dr Lindsay's benevolent exertions for young idiots and imbeciles in the Midland District have as yet been unsuccessful.

In the Report of the Cumberland Asylum, Dr Campbell tells us that the daily average was 575; the total number under treatment in 1891 was 720. He discharged 79 patients recovered, a rate equal to 53 per cent. on the admissions. Dr Campbell calls attention to the fact that the average recovery rate at his Asylum for the last 19 years has been 44·8 per cent., while the average recovery rate of the Scottish Royal and District Asylums in 1890 was no higher than 37·5 per cent. The deaths at Garlands were 9·2 per cent., while the average death-rate in English Borough and County Asylums was 10·5 per cent.

Dr Campbell does good service in calling attention to the monotony of asylum dietaries. In our opinion there should be monthly dietaries framed, instead of weekly ones, to provide for and facilitate variety in the food. Dr Campbell holds that, speaking generally, most people eat too much, and he argues that this is the case in asylums from the prevalence of gall-stones. Though he would increase the quantity of vegetables and fruit in asylum dietaries, Dr Campbell does not favour vegetarianism. He observes that "those entire vegetarians that have come under my observation have struck me as dull, quiet, and wanting in vigor of mind and body, inclined, in fact, to a mild melancholic state. Excessive flesh eaters are irritable, choleric, and apt to be non-resistant of disease." Vegetarians are rare in this country, and there is a risk in judging by a few cases. The statistics of the Irish asylums are very favourable, and in them butcher meat is reduced to a minimum. Moreover, the Irish peasantry live, or at least used to live, mainly on vegetable food, and they are lively and excitable.

In his paper on Pneumonia, a reprint from the *Lancet*, Dr Campbell deals with an outbreak of this disease which occurred at the Carlisle Asylum in 1888. He traces the visitation to the razing of an old farmstead near the male division. This agrees with the view which is gaining ground, that pneumonia is due to a special cause.

Illustrations of the Nerve Tracts in the Mid and Hind Brain and the Cranial Nerves arising therefrom. By ALEX. BRUCE, M.A., M.D., F.R.C.P. Ed. Y. J. Pentland: Edinburgh and London: 1892.

EDINGER, in his *Lectures on the Structure of the Central Nervous System*, tells us that in 1842 Benedict Stilling froze a piece of spinal cord at a temperature of 18° R., and then with a scalpel made a moderately thin cross section. "When I placed this under the microscope," Stilling writes, "and with a power of 15 diameters saw the beautiful transverse striations, I had found a key which would reveal the mysteries of the wonderful structure of the spinal cord. Not more joyfully did Archimedes cry out 'Eureka!' than I at the sight of these fibres."

Stilling's visions of a speedy solution of the problems connected with the minute anatomy of the spinal cord were somewhat premature, for although the task he so well commenced half a century ago has been continued by an ever-increasing band of zealous workers, it is still a fruitful field for the earnest investigator. Our present knowledge of the anatomy of the central nervous system has been largely due to the discovery of various new and improved staining reagents and methods.

Amongst these the hæmatoxylin stain of Weigert holds a prominent place, and the magnificent work now under review is mainly based upon a series of original investigations into the structure of the fœtal brain, the course of the nerve fibres being demonstrated by Weigert's method.

From the preface we learn that this Atlas is intended specially for the use of students of neurology, "who are commencing for themselves the practical examination of the difficult region included between the lower end of the medulla oblongata and the nucleus of the origin of the third cranial nerve." Directions are given for hardening, cutting, and staining sections, but we feel that they are too brief to be of much practical use to the student, and it is to be regretted that the author does not give us the full benefit of his very extensive practical experience.

The first chapter is devoted to a description of the deep origins and connexions of the cranial nerves from the 3rd to the 12th. This intricate problem is discussed in a very clear and methodical manner, and illustrated by a number of excellent diagrams, while the work of others in the same field is freely acknowledged.

The second chapter deals in a similar manner with the tracts in the medulla, pons, and crura.

The remaining portion of the text contains a description of a series of coloured plates, twenty-seven in number. They were made from drawings of sections of the brain, beginning below at the upper part of the spinal cord and reaching to the pons and corpora quadrigemina. With one exception, all the sections are from the human fœtus between the 5th and the 9th month, and they are shown as stained with carmine and Weigert's hæmatoxylin. In almost all the specimens only certain tracts of nerve fibres have acquired their medullary sheath, as shown by the hæmatoxylin stain. They therefore illustrate the order in which certain bundles acquire their medullary sheath; unfortunately, however, in more than half the plates no indication is given of the age of the fœtus. It is impossible to speak too highly of the artistic excellence and fidelity to nature of the plates.

All those who are engaged in the study of the anatomy, physiology, or pathology of the central nervous system will find this work of the greatest service. It is unquestionably the best and most beautifully illustrated work on the anatomy of the mid and hind brain that has hitherto been published, and Dr Bruce is to be congratulated on the successful completion of a work of such scientific interest and practical utility.

Epidemic Influenza; a Study in Comparative Statistics. By J. A. DIXEY, M.A., D.M., Fellow of Wadham College. With Diagrams and Tables. Oxford, at the Clarendon Press: 1892.

THIS book, as the name implies, is simply a statistical compilation, the author betraying in the text no practical acquaintance with the disease itself, although doubtless he has really had considerable experience of it. He has devoted himself to the production of an essay on pure statistics, taking as the basis the Registrar-General's reports for the years 1847–8, 1889–90, 1891–92. As a means of comparison he has also used the available statistics for the cities of Berlin and Paris, and, parenthetically, we may note, with our author, that these reports are not so good or so full as our own. Not content with summarizing the vital statistics for London, Berlin, and Paris, the meteorological notes of these cities are laid under contribution, and the variations in temperature, force and direction of wind, and rainfall, are added in full. The result is a number of highly interesting tables, which are, however, rendered all the more valuable and comprehensive by being reproduced graphically at the end of the volume. These charts, printed in five or six different colours, could not be better. With regard to the subject matter itself, compiled as it is from mortality bills, it cannot be accepted as an absolutely accurate account of the course of the different influenza epidemics, many—the majority—of cases must perforce be left out, but the rise in the number of the respiratory disorders, of the cardiac or nervous cases, serves to limit the period involved on each occasion. Throughout the series lobar and lobular pneumonia are classed together, causing the curves of mortality due to these diseases to be unduly prominent in the earlier decades of life. Lobar pneumonia in influenza statistics should be classed separately. Dr Dixey makes one statement we must controvert, he believes that London is the only city which can show distinctly in the death returns the course of three distinct epidemics in the last three years—he will have to include Edinburgh and the other Scotch towns in his next edition.

A Treatise on Diseases of the Nose and its Accessory Cavities. By GREVILLE MACDONALD, M.D., Physician to the Hospital for Diseases of the Throat. Second Edition. London: Alexander P. Watt: 1892.

IN little more than a twelvemonth the first edition of this book has been exhausted and a new edition called for. So short is the time which has elapsed since the work first appeared, that extensive changes in the new edition are not called for. Still, the present volume is not merely a reprint of the original work, for the author has rewritten or modified his views in certain places, and has added articles on Croupous Rhinitis, on Cysts of the Middle Turbinated Body, and on Idiopathic Rhinorrhœa. In this way about 20 pages have been added, while the book still keeps within reasonable dimensions.

The Appendix contains a table of cases of empyema of the antrum, and a number of cases of nasal disease. We do not see what advantage is to be gained from these cases, isolated as they are from the text, and we would recommend their omission or their incorporation under the proper headings in the text.

The author has undoubtedly produced a most readable book and a safe guide, and the chapter on the Physiology of the Nose is specially interesting and instructive. In his language there is sometimes a want of pointedness, and we notice a tendency to discursive writing, which would be removed by some condensation.

The book is nicely got up, and we notice few mistakes. Still it is curious that "ostitis media" for "otitis media" and "Zanfal" for "Zaufal" should appear in both editions.

Keep Your Mouth Shut. A Popular Treatise on Mouth Breathing: its Causes, Effects, and Treatment. By FRED. A. A. SMITH, M.D., C.M., etc., Hon. Surgeon, Cheltenham Eye, Ear and Throat Infirmary, etc. London: Baillière, Tindall, & Cox: 1892.

THIS little work is written for, and addressed to, the British Public in the hope that it may open their eyes to the terrible things which the author tells them will happen to them unless they can be induced to keep their mouths shut. While we fully recognise the importance of this proceeding, and the harm which may result from persistent mouth-breathing, yet that does not prevent our looking upon the writer's views as inaccurate and his descriptions as hopelessly exaggerated. We are not prepared to follow him when he says, "I consider that mouth breathing is the cause, in varying degree, of most of the physical troubles to which civilized mankind is subject."

An Appendix contains a chapter on Ophthalmia Neonatorum, but for what reason it finds a place in this book we cannot say, unless it is to draw attention to the fact that the writer is Surgeon to an Eye, Ear, and Throat Hospital. The outside of the volume is somewhat deceptive, for we find that, including title-page, preface, and appendix, there are only 49 pages of matter, but along with these are bound 40 pages of the publisher's advertisements. We do not think that the identity of scrofula and syphilis should be discussed in a work intended for the laity, and for this, and other reasons as well, we feel that this is not a suitable book for the public, nor the class of book which we care to encourage.

The Surgical Treatment of Neuralgia of the Fifth Nerve (Tic douloureux.) By WILLIAM ROSE, M.B., B.S. Lond., F.R.C.S., Joint Professor of Surgery in King's College, London, and Surgeon to King's College Hospital. London: Baillière, Tindall, & Cox: 1892.

THIS volume is made up of the three Lettsomian Lectures on the Surgical Treatment of Neuralgia of the Fifth Nerve, which Professor Rose delivered before the Medical Society of London as Lettsomian Lecturer for 1892. In their present form they constitute an elegant and well-illustrated volume, containing a full record of the author's individual contributions to this comparatively recent branch of operative surgery, and an exhaustive *resumé* of what has been done by others in the same field.

A Manual of the Operations of Surgery, for the Use of Senior Students, House Surgeons, and Junior Practitioners. Seventh Edition, Revised and Enlarged. By JOSEPH BELL, M.D., F.R.C.S. Edin., Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Edinburgh: Oliver & Boyd: 1892.

WE do not know of any work which has more successfully fulfilled the objects for which it was written than the volume before us. We attribute its success to the good judgment which has been exercised in the selection of the operative procedures described, to the eminently practical nature of its teaching throughout, and to the lucid and concise style which is so characteristic of its author. We predict as welcome a reception to this the seventh edition as has been accorded to its predecessors.

On Contractions of the Fingers and on "Hammer Toe." By WILLIAM ADAMS, F.R.C.S. Second Edition. London: J. & A. Churchill: 1892.

WE cordially welcome a second edition of Mr Adams' excellent monograph on Dupuytren's Contraction and Hammer Toe, the first having been out of print for several years. To the original essay on Dupuytren's contraction has been added a *resumé* of the work done during the ten years which have elapsed since the essay was first published. There are also included in the present edition a paper "On Congenital Contraction of the Fingers and its Association with Hammer Toe," and another "On the Successful Treatment of Hammer Toe by Subcutaneous Division of the Lateral Ligaments." The essay "On the Obliteration of Depressed Cicatrices by a Subcutaneous Operation" has also been reprinted in the present edition. The value of the book is greatly enhanced by the number and excellence of its illustrations.

Human Monstrosities. By BARTON COOKE HIRST, M.D., and GEORGE A. PIERSOL, M.D. Part III. Philadelphia: Lea Brothers & Co.: 1892.

THIS is undoubtedly the most interesting of the three parts of this valuable work which have been issued. In it is given a very intelligible account of the cyclops fœtus with its curious proboscis, and of the probable mode of origin of this malformation discovered by Dareste, viz.,—Arrest in the development of the anterior cerebral vesicle, due sometimes to amniotic anomalies. The strikingly aberrant types of monstrosity known as the omphalositic are fully discussed, and the theories of origin of Ahlfeld and Breus are stated. The term "omphalosite" is certainly better than the somewhat misleading names "acephalus" and "acardiacus"; but it is probable that the expression "omphalo-angiopagous twin," suggested by Taruffi, would be better still. The rest of this volume is devoted to the consideration of the composite or double monsters, and more especially of the syncephalic variety of these. The illustrations of the external appearances of the various monstrosities are excellent and well chosen.

Our Sick, and how to take Care of Them; or, Plain Teaching on Sick Nursing at Home. By FLORENCE STACKPOOLE, Lecturer to the National Health Society. London, Paris, and Melbourne: Cassell & Co., Limited: 1892.

OF the numberless books on Nursing this is one of the best, simplest, and most practical we have seen. It does not trespass, as too many of them are apt to do, on the province of the doctor; it is written in simple language, quite easily understood by any one who can understand anything; and it contains a very large amount of really useful instruction. The sick-room, and the care of it, especially in cases of infectious disease, are admirably described, and another excellent chapter is devoted to "What the Nurse should notice and note, and how to do it." The practical duties of a nurse to her patient and also to herself are described in such a manner as really to instruct; there is also a short chapter on Sick-room Cookery, and a very short and rather scrappy one about Treatment of Accidents. The table of contents and index are both admirably arranged, so as really to warrant our recommending this little book as a safe and useful manual to help in home nursing in such cases where from expense a trained nurse cannot be obtained.

How to Give Gas. Edited by T. E. CONSTANT, M.R.C.S., L.R.C.P., L.D.S.E. London: J. P. Segg & Co.: 1892.

THIS little brochure is one likely to be of use to general medical practitioners. The idea of the author is evidently to give general medical practitioners, the majority of whom are ignorant of the method of administration of gas, information on the subject, so as to enable them to give their services to the dental surgeon in its administration, or use it themselves for some of the minor operations, for whch it is better adapted than chloroform, etc.

We quite agree with the author in regard to the desirability of such an arrangement if it can be carried out, but there are difficulties in the way which time alone can remove. The little book is concisely written, and gives very good diagrams and details of the various apparatuses used in the administration of N2O gas. The hints in regard to the preparation of apparatus, and precautions to be adopted in giving gas, are admirable, and we quite agree with the author in his note of warning about the repeated administration of gas, and also his condemnation of the reprehensible habit of causing the gas to be reinhaled over again, as carried out by some.

The author gives a good hint in reference to the prolongal of anæsthesia after the removal of the face-piece, by compressing the nose, but fails to mention a better method of prolonging anæsthesia —namely, by means of a small tube, conveying gas, placed at the back of the throat.

We are glad to see the author draws attention to the fact, not generally known, that conjunctival reflex is seldom or never absent in nitrous oxide anæsthesia, and likewise the importance of keeping a good look out on respiration, this being one of the first functions affected by a toxic dose. We are at one with the author in regard to the advisability of every one administering gas being prepared to perform tracheotomy or laryngotomy in case of a tooth or other foreign body slipping into the air passages, though, fortunately, this is a very rare accident. We think it somewhat a pity that no mention has been made of the administration of oxygen with nitrous oxide, which is pretty largely used nowadays, and is decidedly safer and better to use in the majority of cases than N2O alone,—doing away, as it does, with the troublesome jactitations and cyanosis, so alarming in most cases of nitrous oxide anæsthesia. We can commend the little book as one full of useful information.

The Journal of Anatomy and Physiology, Normal and Pathological Part I., October 1892. London: Charles Griffin & Co.

THIS number of the *Journal of Anatomy and Physiology* is largely composed of articles by Edinburgh graduates,—Professor Struthers and Drs Carlier, Hepburn, Musgrove, and Symington being amongst the contributors.

There is an interesting paper from the pen of the late Professor John Marshall, on "The Brain of the late George Grote, F.R.S., with Comments and Observations on the Human Brain and its Parts generally." We learn that Mr Grote, the distinguished historian of Greece, expressed in writing, some years before his death, the following wish:—

"I desire that after my decease my cranium shall be opened by the Professor of Anatomy in University College, London, or by some other competent anatomist." "I desire that my brain shall be carefully weighed and examined, and that the weight thereof shall be communicated to Professor Bain, together with any other peculiarities which may be found, especially whether the cerebellum is deficient as compared with the cerebrum."

This duty was undertaken by Professor Marshall, and the result is a careful description of this particular brain, with a very interesting disquisition on the brains of celebrities generally. Mr Grote's brain was very little above the average male adult, weighing exactly 49¾ oz. As he was 76 at the time of his death, some allowance must be made for the diminution which begins between the fortieth and fiftieth year. After making this allowance Marshall estimates the weight of Mr Grote's brain as between 3 and 4 ozs. above the average. Marshall shows the necessity of taking into account the height, weight, age, and cause of death in determining the relation of the weight of any particular brain to the average.

We have no information as to the weight of the brains of eminent women, but surely this will soon be supplied.

Dr Ambrose Birmingham gives an account of the dissection of a case of "Extreme Anomaly of the Heart and Great Vessels," the value of which is increased by the fact that the case was under observation for three years previous to death. Dr Symington describes the cerebral commissures in the Marsupialia and Monotremata, and maintains, in opposition to Professor Flower, that these mammals have no corpus callosum.

Dr Hepburn compares the integumentary grooves on the palm of the hand and sole of the foot of man and the anthropoid apes, and Dr Carlier writes on the histology of the alimentary canal of the hedgehog.

Altogether the high reputation of the Journal is well maintained in this number.

The Medical Week. Vol. I., No. 2.

THIS is the English edition of *La Semaine Médicale,* which was founded in 1881, and has now an enormous circulation: the yearly number of copies circulated of the French edition exceeds one million. It is now to be published in English, French, and Spanish, at a yearly subscription of 8s. This number contains an interesting paper on Infectious Diseases and Immunity by Metchnikoff, and one by Mayo Robson on Enterectomy; also short reports of the meetings of Societies in London, New York, Paris, Berlin, and other great medical centres. Were it not for the confusion of tongues at Babel, one edition would have sufficed for all this good matter.

Queen Victoria's Jubilee Institute for Nurses, Scottish Branch, for providing Trained Nurses for the Sick Poor in their own Homes. Fourth Annual Report, 1892.

THIS business-like report records a most prosperous and successful year of work done by this admirable charity. Originated in the wise disposal by the Queen of the Women's Jubilee Gift, from a comparatively small beginning a very large organization, extending and to be still further extended all over the country, has grown, by which highly-trained nurses are placed in districts, both of country and town, to work among the sick poor in their own houses, and under the guidance of their own doctors. Absolutely free from religious sectarianism, and guarded by the Queen's wise regulations against any suspicion of being a proselytizing agency, this organization is doing an extraordinary amount of good at little cost, and has in itself a potency of growth, for the Edinburgh Branch not only nurses the sick poor of Edinburgh and Leith to the amount of over 40,000 visits in last year, but also trains nurses who are being gradually distributed to other districts in Scotland. Besides the 31 in various stages of training or work at the Central Home, no fewer than 53 Queen's nurses are now working in different towns, villages, and country districts in Scotland. Each visit made by a nurse is really much more than a mere medical or surgical call. It means sorting the house, instructing the relations in methods of ventilating and cleansing the room, making the bed, cooking sickroom dainties, and, in a word, helping the patient and his friends into the best modes of curing disease and averting death. All this under the doctor's orders; and any doctor who has felt the advantage of a trained nurse to carry out his instructions in the homes of the poor can testify to the value of these services. The one thing needed to aid in enlarging the scope and increasing the value of this work is money. The Central Home is capable of containing more nurses if only the funds come in. Capable women are to be had if the money to pay them can be secured. Doctors should advise their rich patients either to found a nurse at their country homes, or leave a big legacy to the Central Home.

Real Cookery. By GRID. London: T. Fisher Unwin: 1893.

THIS prettily got up booklet has a fascinating exterior, and a charming hussy of a cook, with neat ankles and a ravishing cap, as a frontispiece. It starts with a fixed idea,—to grill is safety, to fry is danger. Aim at simplicity and perfection in your simple dishes. Avoid "painted dishes." Be on good terms with your cook, and don't overdo your decorations. Roast, and bake not. Have good entrées or none: All true and excellent principles; but, granting all this, we do not think that it will be found generally useful, nor do we consider many of the rules very practicable or likely to be adopted. Some of the ideas are far from economical, and would only do for people of considerable means, who would not grudge getting the many expensive items mentioned,—such as "fresh truffles and goose liver," chocolate at 4s. a lb., etc. We quite agree with the author in thinking that too highly ornamented dishes are in bad taste, but there is a happy medium, and surely decorations, both as to dishes and dinner tables, are too much discouraged. The author must have been very unfortunate in being offered so frequently such unappetising dishes as he describes, and we cannot think that this is so common as he makes out. There is considerable sameness in his "abundant suggestions" for entrées, as, indeed, there is in all his receipts,—four out of his six "sweets," for instance, being partly composed of chocolate. It seems to us that many of the dishes given for invalids would be stroked out by the doctor,—such as plum pudding and chocolate wafer cakes made with filberts, which are not generally considered quite suitable for dyspeptics! and, if frying is so objectionable, why are fritters and white bait to be an exception? We personally do not think that frying, even of meat or fish, if properly done, is to be altogether tabooed.

LETTS'S MEDICAL DIARY contains much information, compiled expressly for the use of the medical profession, besides ruled pages for noting engagements, obstetric or otherwise, vaccination, nurses' addresses, thermometrical or other fluctuations, monthly cash account; is admirably got up for the pocket in cloth or leather.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXXII.—MEETING II.

Wednesday, 7th December 1892.—Mr Joseph Bell, *President, in the Chair.*

I. Election of Members.

The following gentlemen were elected Ordinary Members of the Society:—James C. Dunlop, M.B., M.R.C.S., 24 Stafford Street; William Elder, M.B., C.M., 4 John's Place, Leith; E. Coleman Moore, M.B., 9 Atholl Place; Robert Stewart, M.A., M.B., 42 George Square; William M'Ewan, M.A., M.B., Prestonpans; George R. Wilson, M.B., C.M., Royal Edinburgh Asylum; Richard J. E. Young, M.B., C.M., 14 Ainslie Place.

II. Exhibition of Specimens.

Mr David Wallace showed—(1.) Vesical calculus with foreign body (paraffin) forming the nucleus; (2.) Vermiform appendix.

Dr James Carmichael exhibited portion of left lung and œsophagus of a patient who had died of measles. There was a fistulous opening between the œsophagus and an empyemic cavity for which the patient had been under treatment in hospital. The opening in the œsophagus was 1¼ inches above the cardiac orifice of the stomach, at the point where the tube deviates to the left side and in front of the aorta before it passes through the diaphragm. The case showed several points of interest. The child, aged 21 months, had been little over two months in hospital. The history showed that she had suffered from gastro-intestinal catarrh after weaning, and was not in good condition when the present illness began two months prior to admission. At that time she had an attack of pneumonia, from which she did not completely recover, and the mother states she was being treated for "heart complaint," and was taking digitalis. She had been gradually losing flesh, and was brought to hospital on account of a horrid fœtor of the breath which had been noticed for some weeks. On admission she was emaciated and pallid, with an irregular febrile temperature and sickening fœtor of the breath. The left side of the chest was dull, especially the lower half; almost entire absence of breath sounds. The chest wall at the left lateral base showed obliteration of the intercostal spaces, with some œdema of skin. Five ounces of intensely fœtid pus were drawn off, and next day a drainage-tube inserted, and subsequently resection of one rib was performed to secure efficiency of drainage. The cavity was irrigated, and in three days the report notes, "discharge is now fairly sweet," but was noticed to contain numerous white shreddy coagula with a smell of sour milk. The microscope showed milk globules, and the following day, after the child had taken beef-tea, the discharge showed striped muscle under the microscope. From the time the cavity was drained the child showed steady improvement, which was only interrupted for about a week by diarrhœa. After this the progress was satisfactory, and at the end of a month after admission it was noted the "discharge was very slight and quite sweet and odourless." It was thought highly probable at this time that the fistulous opening was closing, and that the drainage-tube might soon be removed. Unfortunately, measles had broken out in the ward, and she was attacked by the disease, and died after a week's illness. Had it not been for this untoward occurrence, it seemed likely that recovery might have taken place, as the abscess cavity was very small, being estimated to hold only about half an ounce of pus, the rest of the pleural sac being quite obliterated.

III. EXHIBITION OF INSTRUMENT.

Dr Dawson Turner showed a BICHROMATE OF POTASH CELL.

IV. ORIGINAL COMMUNICATIONS.

1. *Dr Templeman* read his paper on TWO RARE CASES OF SUDDEN DEATH IN MEDICO-LEGAL PRACTICE, which will appear in a future number of this Journal.

Dr James Ritchie said he wondered if Dr Templeman had discovered if the man got into what might be called *a white heat.* That meant, of course, that through the vaso-motor nerves there was a very great contraction of the capillaries and smaller vessels. In a man of highly nervous temperament this might occur over a large extent of body, and account for the condition of diastole at the post-mortem. Regarding the second case, those engaged in obstetric practice were aware that when endeavouring to knead the uterus, if they happened to grasp the ovaries, the most serious symptoms were occasionally produced, and even death if the pressure was continued. He thought they were much indebted to Dr Templeman for recording these most important cases.

Dr Herbert Littlejohn said he thought Dr Templeman's paper was especially valuable, because the post-mortem seemed to have been so complete. He would, however, have been more satisfied if the condition of the various organs in the body had been stated. Dr Templeman had merely stated that nothing was found to account for death. In his experience, which he admitted had as yet been short, all people of the age Dr Templeman described, dying suddenly, had more or less disease. The question was if the disease in the various organs taken together would not predispose to death from a very slight amount of shock. As far as his experience went, he had never seen a case like those described by Dr Templeman. He thought the Society was much indebted to Dr Templeman for the record of his interesting cases.

Dr Templeman, in replying, said that with regard to the question Dr Ritchie had put to him, he had no information such as he would like, except just that on the occasion on which the man fainted, when he was in a very passionate condition, he, of course, was very pale, but he did not know if it could be called *a white heat*. The history he had got from the man's wife was just as he had stated in his paper. With regard to the post-mortems, they had been most anxious to find some lesion that would account for death. A most complete examination of every organ had been made, but they failed to find anything that would in any way account for the fatal result. All the organs were quite normal.

2. *Mr David Wallace* read his paper on CYSTOSCOPY IN RELATION TO VESICAL NEOPLASMS, FROM NOTES OF 23 CASES, which will appear in a future number of this Journal.

The President, in inviting discussion upon the paper that had just been read, spoke of the high value of Dr Wallace's work with the cystoscope, and referred to some former cases of his own in the diagnosis of which he thought he would have been helped by the cystoscope. He called upon Mr Duncan to begin the discussion.

Mr John Duncan said he had come there to learn and not to teach. He had, however, within the last few years had some little experience of tumours of the bladder, and could confirm, to a large extent, what Dr Wallace had so well said. He entirely agreed with him that the bladder hæmaturia which he described, unaccompanied by signs of inflammation, was an almost pathognomonic symptom of tumour of the bladder. He would almost go the length of saying that below middle life it was a pathognomonic symptom. There was one condition that very closely simulated it in more advanced life, and that was hæmorrhoidal state of the prostate, a condition of venous engorgement occurring in old age which gave rise to similar hæmorrhage to that in simple or malignant tumour of the bladder. It was in such cases that we got the benefit of the cytoscope. He referred to a case which Dr Wallace had seen with him, the case of an old man who evidently had either tumour of the bladder or hæmorrhoidal prostate. He could not come to a closer diagnosis without opening the bladder. In such a case the cystoscope was most advantageous and ought to be used. In this case it was used, and a tumour was diagnosed and afterwards removed. It turned out to be papillomatous. The cystoscope was in certain cases sufficient to give an absolute diagnosis. There were cases, on the other hand, in which it was merely an adjuvant, and others in which you might look through the cystoscope for a long time and make out nothing whatever—for example, in large tumours and tumours behind the prostate. In these cases a bimanual examination, with one hand over the bladder and the other in the rectum, was exceedingly valuable. He quite agreed with Dr Wallace, however, that in all cases in which diagnosis was incomplete by other means it should be used as an adjuvant, and even if a diagnosis had been made, the use of the cytoscope could do no harm.

Professor Chiene said he was glad Mr Duncan had spoken with no uncertain sound about intermittent hæmorrhage being pathognomonic of tumour of the bladder. He thought we should further take the words of Dr Wallace in reference to malignant tumours. He believed that simple tumours often became malignant, and he thought that every physician who had charge of a case of a man not above middle life, in whom there was intermittent hæmorrhage from the bladder, should consider it his absolute duty to recommend that his patient should be examined with the cystoscope. If got early the tumour would probably be a papilloma and not an epithelioma. It was to be compared with papilloma of the face, which when years passed by became epitheliomatous. With regard to operation for tumours of the bladder, he wished to observe three points. First, he was not fond of Petersen's bag. He had not got benefit from it. The second was that he thought he would soon adopt Trendelenburg's position. Third, when you operated upon a tumour of the bladder in which there was severe hæmorrhage and weakness from the bleeding, he thought the operation should be done in two stages. First, the bladder should be opened. Thus the bladder was put at rest, and bleeding ceased. After a fortnight or so you proceeded to remove the tumour. A large enough tube had to be worn during the fortnight. There was no preliminary trouble, you simply placed the patient under the anæsthetic, and proceeded to remove the tumour as Dr Wallace had described. He had as yet only one case to go upon in which he had operated in this way, but this case had impressed him very much. There was one other point. In opening the bladder he, as Dr Wallace had said, cut the recti-tendons transversely. He fully exposed the bladder first, then he believed in fixing the bladder wall with a four-pronged hook. He had had a case once in which the knife he used was not very sharp pointed, and as a result it pushed the mucous membrane of the bladder before it. He therefore fixed the bladder wall with a four-pronged hook, and then plunged the knife in decidedly. It was also of great importance to introduce the finger at once, before fluid had escaped from the bladder.

Mr John Duncan asked to be allowed to add one observation to what he had already said. He did not agree with one point to which Dr Wallace had referred, and which Mr Chiene had supported. He doubted exceedingly the passage of the simple into the malignant tumour. We certainly found epithelioma arising from prolonged irritation, but only after exceedingly prolonged irritation,—for example, after ten or fifteen years' irritation of the scar of a burn. He thought that if a simple tumour did pass to a malignant one it was only after ulceration or other prolonged state of inflammation. He did not think that the passage of simple tumours into malignant had by any means been established.

Dr M'Bride remarked that what had been said reminded him of a collective investigation recently made into laryngeal tumours. The point was, if simple tumours passed into malignant. The result was to show that such occurred. He was very rarely surprised to hear Professor Chiene state in such a general way that simple tumours passed into malignant.

Dr William Russell said there was one point he would like to ask the surgeons, and that was, if they really meant that hæmaturia was invariably caused by tumours of the bladder. Could they distinguish between bladder and kidney hæmaturia? That was a point which physicians were sometimes at a loss to settle. Professor Chiene had said that as soon as they had a case of hæmaturia they should examine the bladder with the cystoscope.

The President said he wanted to refer to a small part in the technique of the operation for tumours of the bladder. Dr Wallace had said that after the bladder was opened he kept the sides apart with Péan's forceps. His experience was that it was not a very safe way. It nipped the part too strongly and caused inflammation at the spot, if not worse. He thought it better to pass one loop of thread through the bladder wall by means of which the edges could be retracted after the bladder was opened. This caused less irritation. He was always afraid of the effect of a Péan, which caught and gave a good pinch.

Dr MacGillivray related a case which he had recently had, *à propos* of hæmorrhage being pathognomonic of tumour growth. A lad of eighteen had for two or three years back had remarkable hæmaturia. There was no venereal history. Following exposure to cold or wet he had great frequency of micturition, and following this he had attacks of hæmaturia. When he came into hospital he had hæmaturia, frequency of micturition, and pain at point of penis. Examination showed no stone in the bladder. On bimanual examination the bladder wall seemed to be thickened. Patient had well-marked epididymitis on one side and slight on the other. The right kidney could be distinctly felt, and appeared to be slightly enlarged, though not painful. On examining the urinary deposit under the microscope there was well-marked blood, and a few pus cells, but not sufficient to indicate tubercular kidney. The blood in the urine stopped under hazeline. As improvement was not maintained suprapubic cystotomy was performed. The internal wall was slightly thickened. There was no ulceration. The mucous membrane was slightly projecting into the bladder. He scraped away any part of the mucous membrane that seemed to be unhealthy with the Volkmann's spoon. Since operating scarcely any blood had passed. The small portions that were removed might have been multiple papillomata, and the case might have been one confirming the statement that hæmaturia always indicated growth in the bladder. All the symptoms had pointed to a tubercular condition except the absence of pus in the urine.

Mr Wallace, in replying, said he had first to thank them for the kind way in which they had received his paper. With regard to Dr Bell's question about the relative advantages of Péan's forceps and stitches, he had just the opposite feeling from him. He did not mind the little bit of squeeze that the margin of the bladder got. You got a firm hold with Péan's forceps, while stitches were apt to tear the bladder. Unless thick silk was used, and you were very careful not to pull too much, you were apt to pull the stitches out. With regard to the question of hæmaturia that Dr Russell had referred to, he said that he agreed absolutely with what Mr Chiene had said regarding the duty of the physician when he had to deal with hæmaturia, the nature of which he had to decide upon. If the hæmaturia was proceeding from the kidney, you could see it coming down the ureters. He had been able to demonstrate this on more occasions than one. With the cystoscope you were able to decide in many instances not only that the hæmaturia was not from the bladder, but which kidney it was coming from. There were cases in which kidneys had been excised, from which, by examination with the cystoscope, it had been ascertained that hæmorrhage was proceeding. With regard to the question of transition of tumours, it was one for pathologists to answer rather than a surgeon. He noticed that with regard to tumours of the bladder, most of the pathologists writing upon the subject indicated in no very uncertain way that there was a change from a simple to a malignant type. Albarran quoted cases which pathologically and clinically seemed to prove this point. He referred to a case that Dr Stockman had recently told him about. He had had a patient who for many years had suffered from hæmaturia, at first small in amount, but which increased afterwards in frequency and degree. The patient died, and at the post-mortem it was found that he had a large infiltrating malignant tumour of the bladder. There was little doubt that this was an instance of a simple tumour that had become malignant.

3. *Dr Ramsay Smith* read his paper on a CASE OF ACQUIRED UMBILICAL FÆCAL FISTULA, which will appear in a future number of this Journal.

The President said the condition was no doubt a very rare one.

He had seen two cases. One of them Dr Boyd might remember, as he had, he believed, written the post-mortem report. The other one was in a girl of thirteen. She came into hospital with a tremendous fæcal fistula at the umbilicus. She passed nearly all her stools, which were probably ileum stools, at the umbilicus. There was considerable ulceration in the neighbourhood. He got it cleaned, and eventually operated after the method of Mr Cooper Foster. Patient went out with still a small fistulous opening. After some years the patient turned up again with the opening still unclosed. After another small operation she got quite well.

Dr Boyd said the case Mr Bell referred to was that of a child of nine months. It was brought into hospital with an umbilical fistula; the child was extremely emaciated. There had been apparently peritonitis, and the bowel had become adherent to the abdominal wall. Ulceration had followed, and a fistula had formed at the umbilicus. The child passed a large amount of fæces through the fistula. The child eventually died. There was no doubt that the ulceration was tubercular.

Dr Templeman referred to a case of this nature that he had had under his care at Dundee. It was in a child of four years. When two, an abscess formed in the region of the umbilicus and burst, leaving a fistulous opening evidently communicating with some part of the small intestine. When brought to Dundee Infirmary the child was exceedingly emaciated. Operative interference was out of the question on account of the state of the abdominal walls. The child was passing the whole of its fæces by the fistula. The fæces were quite liquid, and the opening through which they came was quite a small one, so small that it was difficult to see it. Patient was kept in bed and carefully fed. Before coming under his care it had been treated by copious enemata of hot water. By-and-by the discharge began to diminish, the bowels operated in a natural way, and the fistula healed up, but it opened up again several times. After some months the fistula remained closed. What the exact condition was in this case he could not say.

Professor Struthers said that Dr Smith's mention of the diverticulum had brought him to his feet. He thought it was rather speculative to suggest a diverticulum. The whole question turned upon the point of communication, which was not ascertained. It might be anywhere. Why suppose it was in connexion with a diverticulum? He would suggest to Dr Smith not to make up his mind that it was a diverticulum.

Mr Wallace mentioned a case operated on by Professor Chiene of obstruction to the bowels due to a coil of intestines passing below a cord passing from the blind extremity of a Meckel's diverticulum, and attached to the mesentery. The patient was now perfectly well seven years after the operation.

Professor Struthers said he had seen several cases similar to that which Dr Wallace described in respect of the cord passing from a Meckel's diverticulum. He begged to refer those interested in this subject to a paper he published on "Diverticula from the Small Intestine" (*Edinburgh Medical and Surgical Journal,* 1854), in which he described and figured twenty cases, with a consideration of the subject from the anatomical and pathological points of view. He had met with a number of cases since, and hoped to have an opportunity of bringing them under the notice of the Society.

Dr Ramsay Smith, in replying, said that the only point that occurred for remark was what Professor Struthers said. It was the very point that had exercised him most. If tubercular inflammation had been the cause, one would naturally have expected some evidence of it. But in his case there was absolutely no evidence of any sort of inflammation in any part of the abdomen. It seemed to him impossible that the large or small intestine could have become adherent to the abdominal wall and tubercular ulceration have taken place, making an exact opening within a few hours, just like a life-buoy, at the umbilicus. Tubercular inflammation would not account for this condition. The only thing that could account for it was what he had suggested. In Mr Bell's and Dr Boyd's cases it was different. They were cases where there was ulceration. In his there was none. He could not conceive of any other explanation than what he had given that would fit in with the facts of the case. The weak point, no doubt, was the want of a post-mortem examination, which in the peculiar circumstances of the case it was impossible to obtain.

ROYAL MEDICAL SOCIETY.

Nov. 18.—Dr Fowler in the chair.

Dr Rainy delivered his Presidential Address, the subject being "Some Notes on Medical Cliniques at Vienna." This paper met with such appreciation by those who heard it that it has been published at length. The interesting information it contained will be of great value to many who intend to avail themselves of the exceptionally good teaching in Vienna. In consequence of the vast amount of material collected in Vienna, the teaching can be made much more useful from a practical point of view than here, and specimens of almost all diseases can be seen in succession during a short course at any of the cliniques. Opportunities for practising operations are obtainable for senior students. In the Eye, Ear, Throat, and Skin departments the practical experience is peculiarly valuable. Mr Scott-Skirving proposed, and Dr Wallace seconded a vote of thanks to Dr Rainy for his address.

Mr D. A. Welsh gave a most interesting communication on Post-Partum Shock, and read the history of the case. It was that of a multipara, pregnant for the thirteenth time, in whom there was ante-partum hæmorrhage commencing three days before labour, with fairly considerable post-partum hæmorrhage from an abnormally low placentation. This was followed by distressing strangury and tenesmus produced by corrosive poisoning, and complicated by collapse of a recurrent nature. The collapse he described as beginning by a stage in which retching increased in severity, the pulse became weaker and more rapid, and the skin ultimately clammy and cold, all culminating in a state in which the pulse became imperceptible, the face blanched, the pupils dilated, and respiration extremely shallow. This extreme prostration only lasted a quarter of an hour, and was followed by a rapid stage of rallying, in which the lips and face regained their colour, the pulse improved, and the retching diminished in violence. The point specially dwelt upon was the recurrent nature of the collapse, which was not to be directly accounted for by the corrosive poisoning. Hæmorrhage as a cause was also negatived by the sudden inception and remission of the syncope, and by the short duration of the attacks. Another possibility offered for consideration was reflex shock from ovarian irritation, set up when the uterus was grasped to arrest hæmorrhage. But since no further pressure was applied to the uterus after the first shock, the two subsequent and similar syncopes were accounted for either by reaction from the vaso-motor spasm which produced the blanching of face and lips, affecting the ovaries, and also causing congestion of them, or by actual hæmorrhage into the substance of the ovaries, which was temporarily arrested by the shock, and which returned in a reactionary form. Mr Welsh then went on to show how the risk of such a condition as the above may be avoided by careful attention to the position of the hand in compression of the uterus, the danger being averted by introducing the hand in the left oblique diameter. He recalled the fact that during pregnancy the uterus becomes rotated about a vertical axis, so that at the time when extra-uterine pressure is most frequently indicated, the left ovary, following the swing of the uterus, is brought on the whole more to the front, while the right is carried more to the rear.

Dr John Orr read a communication, with notes of the post-mortem results, on a case of Mitral Stenosis, sketching first some of the common features found in such conditions, and mentioning its more frequent occurrence in females than in males. The case was one which was remarkably wanting in distinct auscultatory signs, as the heart sounds were weak, and there were superadded physical signs of pulmonary embarrassment. Its chief point of interest centered in the enormous size of the heart, which in the recent state weighed 1 lb. 12 oz., the cone diameter of the mitral valve being ·3. In referring to the reduplication of the second sound in the pulmonary area, Dr Orr repudiated the theory held by some, that the first portion of this sound is due to the closure of the pulmonary valves, and that the second portion is an auricular systolic murmur. Dr Orr explained at length his reasons for believing that the sound is a purely valvular one, due to a synchronous closure of the aortic and pulmonary valves, brought about by abnormally high tension in the pulmonary circulation, or less frequently, to abnormally low tension in the aortic systemic circulation.

Nov. 25.—Dr Carmichael in the chair.

Dr Fowler gave his Presidential Address, raising in it a standard of culture not usually aimed at by the general run of practitioners. He showed that a man of culture holds an influence over his patients which another, however advanced in medical knowledge, can never gain. Training in other branches, he urged, fits a man as nothing else can for a successful career, enabling him to regard his patients from a psychical and social as well as from a merely physical standpoint. He can thus more accurately recognise where, in the complex human organism, the machinery is at fault, what the defect is caused by, and what means will most rapidly restore the machine to its normal state,—he can, in short, arrive at an accurate and rapid diagnosis, the stepping-stone to a rational therapeusis. Among other points, he touched upon the value of making a habit of taking notes of cases for reference in after years. He spoke of the great varieties of disease, and advanced the theory that the "normal" varies as widely. Dr Giles proposed a vote of thanks, which Dr John Orr seconded.

Mr Hutchison gave a communication on a case of Epiphysitis, which he was inclined to think was syphilitic. The case was that of a very young child, with evident syphilitic rash and coryza, and a swelling at the upper part of the left humerus, which was fluctuating and painful, with enlarged veins, but was not red. The condition of the child did not admit of the administration of mercury. It died a few days after being first seen. At the post-mortem a quantity of pus was found in the swelling and the upper end of the humerus lying free in the cavity. He referred to the clinical sign of paralysis which sometimes occurs in these cases, and having mentioned its probable cause, he spoke of the differential diagnosis between syphilitic epiphysitis and rickets, infantile paralysis, and other affections. The question was, Is this syphilitic epiphysitis, or acute epiphysitis, occurring in a child with congenital syphilis? The limit of the disease to one joint and the suppuration seemed to negative the former. Mr Hutchison discussed at some length whether syphilitic epiphysitis is ever confined to one joint, and whether syphilitic cases ever go on to suppuration. The case led to some interesting discussion, in which Drs Crerar, Fowler, Murray Leslie, Orr, Stuart, and Mr Craig Dun took part.

Dr Macaulay communicated a case of Heart Disease, with specimens. The patient, aged 27, with a history of acute rheumatism some years previously, had a dilated heart, double aortic and double mitral murmurs. About a month before death there was an attack of subacute bronchitis, followed by acute gastric symptoms, and some days later thrombosis of the axillary vein, with œdema of the left arm, left breast, and left side of the head. The specimens which were exhibited showed dilatation of the heart, especially of the auricles, with extreme stenosis of the mitral valve, so much so that water would scarcely flow through it. Extensive pulmonary infarcts and great gastric dilatation were also present, the former of which alone had been diagnosed during life. Dr Macaulay gave a short account of the treatment of the case, and invited discussion on the venous thrombosis and the gastric dilatation. He stated that when first seen the patient had no dilatation of the stomach, and considered that this had come on with the acute attack referred to. Drs Murray Leslie, Watson, and Stuart, and Messrs Alexander, Bell, Craig Dun, Hutchison, and Martine discussed the case.

Mr J. P. Stewart read a very interesting dissertation on the Use of Cold Water in the Treatment of Disease. He traced its use from the remotest antiquity, quoting Greek and Latin authors who mention its application in various diseases. Mr Stewart spoke of the scientific investigations made by German observers of the modes in which internal and external applications of water act upon the circulation, temperature, and metabolism of the body. He described at some length the physiological action of cold water upon the body in virtue of its temperature, illustrating his remarks by sphygmographic tracings of the normal radial pulse, and the remarkable changes produced upon it by the application of cold water to the elbow. A lengthy discussion followed upon this dissertation, in which a number joined—viz., Drs Crerar, Giles, Murray Leslie, Macaulay, Wallace, Watson, and Stuart, and Messrs Bell and Martine.

Dec. 2.—Dr Crerar in the chair.

An interesting debate took place, being the first held this session. The motion "That in the opinion of the Royal Medical Society there is a growing need for 'Specialism' in Medicine" was laid before the meeting in an exhaustive speech by Dr Murray Leslie. He defined a specialist as one who devotes himself wholly, mainly, or even largely to any particular branch of Medicine. After a short preliminary sketch of the early history of specialism in Greece and Egypt, and the hostility with which it was received in England some thirty years ago, he referred to its present success and the advantages it brought to the public, to general practitioners themselves, and to the progress of medical science, as arguments for its further development. Mr Hutchison moved a direct negative to the motion. He commenced by drawing a sharp distinction between specialism and special practice, and advocated the latter as advantageous both for patients and practitioners, and in a full and very able speech he pointed out the inadvisability of specialism, because by the very nature of its exclusiveness a man is unable to keep abreast with progress made in other branches of Medicine, whereas every general practitioner who makes a special practice of one branch of Medicine has also a knowledge of all other parts of the human body. He considered that we could not accurately judge of the value of specialism by the favour it met with among the general public, because they are not in a position to form an opinion of its merits. Mr Alexander seconded the affirmative, Dr Watson the negative motion. A number of gentlemen expressed their opinions on either side, and the debate was carried on until a late hour. A difficulty was experienced by many members in knowing exactly what was meant by the terms of the motion. Dr Murray Leslie gave a wide meaning to the term "specialism," including under it both the specialism and the special practice between which Mr Hutchison drew so sharp a distinction, so that all who agreed with the latter as to special practice also concurred with part of the affirmative motion to some extent. This led to a division of votes which would have been no doubt different had the terms of the motion been worded otherwise. When Mr Hutchison replied, many of those who had opposed him perceived that they had misunderstood his definition. The debate proved a most interesting one, and was productive of many excellent speeches from the members who took part in it. The affirmative was lost by a large majority; the division being eleven for the affirmative and twenty-four for the negative.

Dec. 9.—Dr Rainy in the chair.

There was a large attendance of members.

Dr Alexis Thomson's Lantern Demonstration was received with great attention and interest. Dr Thomson showed a long series of slides illustrating various surgical deformities and diseases. The photographs were peculiarly valuable, as they were nearly all of common cases likely to come under the notice of every practitioner. They were clearly thrown upon a screen, and were so easily grasped in all their details by the whole audience, that it is to be regretted that this form of lime-light pictorial teaching is not more largely used in our medical schools. A hearty wish was expressed that the Society might have the privilege of receiving another demonstration from Dr Thomson at some future date.

Three short communications were given by *Dr F. W. M'Kay*, the first being the exhibition of a very ingenious mechanical arrangement of his own, whereby an ether spray for freezing sections is driven by the foot, leaving the hands free to work. The second was some notes on a case of intussusception in a dog, which he had diagnosed as such. The third was an account of a peculiar idiosyncrasy of his own skin, in which contact with potassium bichromate sets up a form of erythema, with rise of temperature, great irritation, and pain. Dr M'Kay described the symptoms and treatment in detail, having had the attack five distinct times, each attack coming most clearly after using potassium bichromate.

Dr J. A. Hamilton sent an interesting dissertation on "Influenza," which in his absence was read by Mr Hutton. Beginning by sketching the history of the disease and the numerous visitations of it during the last eight centuries in England and elsewhere, he went on to describe the symptoms and course of a simple typical uncomplicated case. After discussing the various names given to influenza, and the different forms it may assume, with the complications and sequelæ which so often arise, he gave numerous opinions as to its cause. He stated that everything known about influenza goes to prove that it is due to a special virus, quoting a description, by Dr Althaus, of a bacillus discovered a year ago by Pfeiffer, who asserted it to be the cause of influenza. Dr Hamilton held that the nervous system is the chief seat of disease, though the exact part of the nervous system which suffers has not yet been proved. He ended by touching on the diagnosis, prognosis, and treatment of influenza, and endeavoured to explain where influenza arises and how it spreads.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

MEETING II.—*Nov.* 23, 1892.—ROBERT POLLOK, *President, in the Chair.*

Dr Murdoch Cameron showed a DERMOID OVARIAN CYST, several small FIBROIDS, and a UTERUS with a mass of small FIBROIDS in its walls, all removed from an unmarried woman, aged 48 years.

Dr Robert Jardine, out-door Physician to the West End Branch of the Maternity Hospital, read NOTES OF 1028 CONFINEMENT CASES, being the report of two years' work at the Branch; 932 were confined at full term, 65 prematurely, and 31 aborted. There were 13 cases of twins. The operative cases were—forceps 63, version 10, craniotomy 1. Induction of premature labour, 1. He gave full notes of the five fatal cases. One was due to pneumonia, from which the woman was dying when prematurely delivered; two to puerperal fever; one to concealed accidental hæmorrhage, and one to placenta prævia. This latter did not send for assistance until she was *in extremis*, and died as the doctor reached her. There were 7 cases of accidental hæmorrhage, and 1 of marginal placenta prævia, treated successfully. There were 6 cases of post-partum hæmorrhage. He always cleared the clots out of the uterus before using the hot douche. There were 2 cases of eclampsia: one, a multipara, had two fits before and eleven after delivery; the other, a primipara, had three before and one after. In the former case the urine was loaded with albumen, while in the latter it was normal. The treatment was rapid delivery under chloroform, and chloral and bromide by the rectum. Both recovered. He induced premature labour at 7½ months, in one case with a conjugate of 3 in. and in another of 2¼ did craniotomy. The placenta was adherent 16 times. Syphilis he believed to be the most frequent cause. He used Milne Murray's axis-traction forceps, and expressed great satisfaction with it. The usual routine was for the nurse to allow the second stage to go on for two hours, and if there was then no advance to send for assistance. Weak perchloride of mercury was the antiseptic used. Normal cases were not douched unless bleeding ensued. There had been comparatively few alarming rises of temperature, considering that the houses were, as a rule, frightfully dirty, and many of them in an insanitary condition. When a rise occurred he douched out the uterus with a 1 to 2000 perchloride solution, ending up with pure warm water. He had never seen the least sign of mercurial poisoning.

In the discussion which followed, Dr S. Sloan congratulated Dr Jardine on the admirable report he had read. He thought the mortality of 1 in 200, was exceedingly low considering the nature of the work. He preferred aseptic to antiseptic midwifery, and was glad to hear cleanliness was so strongly insisted on. He believed in absolute cleanliness, and always washed his hands with soap and water first, then perchloride solution, and finally rinsed them in pure water. He made the nurse do the same, and the same was done to the patient, and her breasts and vulva treated in the same way. He liked the idea of ending up the perchloride douche with warm water. He had never seen mercurial poisoning occur. He would not have called the fourth fatal case one of puerperal fever, as it seemed to him that the woman simply succumbed from the very low state of health she was in, bodily and mentally.

Dr M. Cameron said it was rare to find the perineum tear from the anus, but a similar case had been reported to the Society by Dr Turner. He believed the long straight forceps was very apt to plough up the perineum. The best treatment in septic cases was proper and frequent douching of the uterus with perchloride. In the pure form of septic absorption, the woman often never complained of any abdominal pain, but merely of languor, slight headache, and vomiting. The lochia might not be foul. Peritonitis of a low form existed. Abortions and hæmorrhages, he believed, were very frequently due to syphilis. He had never seen a death from concealed hæmorrhage. He always interfered early in all cases of hæmorrhage. He thought the Sanitary Authorities should take charge of cases of puerperal fever, even if they did not remove them, as a medical man would have to give up doing midwifery while he had to look after such a case.

Dr Richmond said the low mortality was very encouraging. The small number of placenta prævia cases and craniotomies agreed with his experience of 25 years' work. He had only had some 2 or 3 cases of puerperal fever, and he took no elaborate precautions, and used no antiseptics.

Dr Millar remarked that years ago, when he was connected with the old Maternity Hospital, the mortality was much higher. He was surprised that the abortions had given so little trouble. He found that in private he had very frequently to interfere and clear out the uterus.

The President said he never gave ergot to assist labour, but frequently gave it just as the head was on the perineum. He considered he got better contractions, had fewer cases of post-partum hæmorrhage and subinvolution. In severe hæmorrhage he never gave it, as he considered it had a very depressing effect on the muscular fibre, and might extinguish the efforts of a flickering heart. Douching with warm water, after perchloride, was a good suggestion. He preferred 1 in 80 carbolic acid to perchloride. In threatened abortions, when the contractions were rhythmic he usually inserted a tampon, and in 12 hours, on removing it, in many cases found the complete ovum come away with it.

Dr Jardine, in replying, said that he was not aware of there having been any more than five deaths. In a few rare cases the patients had absolutely refused to keep their beds or do what they were told, so he had ordered the nurse to take nothing further to do with them. If any of these died he was not responsible. The fourth fatal case he had put down as due to puerperal fever, but he had had his doubts about it. Concealed accidental hæmorrhage he had unfortunately seen three times, and had interfered in every case as early as possible, but to no avail. If he should have another case, he said he intended to try intravenous injection of a saline fluid. The abortions had certainly given very little trouble, and had mostly been managed by the nurse or students alone.

Part Fourth.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

ATROPINE IN HÆMOPTYSIS.—M. B. Blumenau (*Meditzinskoïĕ Obozreniĕ,* No. 9, 1892) emphatically confirms recent statements as to the powerful hæmostatic properties of atropine. He relates the case of a phthisical soldier, who was expectorating one and a half or two tumblerfuls of pure blood daily, in spite of the application of ice bags to the chest, and the internal use of ergot and mineral acids in full doses. On the fourth day of the hæmoptysis $\frac{1}{60}$ grain of sulphate of atropine was injected under the skin. The blood spitting at once considerably decreased, and after a second injection on the following morning, speedily ceased altogether. The patient's sputum remained slightly tinged with blood for a few days afterwards, but the discoloration soon disappeared, and the man was discharged in a satisfactory state. In the way of secondary effects only slight dryness of the throat and some acceleration of the pulse were observed for a short time.—*British Medical Journal*, 3rd December 1892.

ALUMNOL.—M. Chotzen (*Berl. Klin. Woch.*, No. 48, 1892) has investigated the therapeutic action of alumnol, a substance discovered by Filehne, of Breslau. Alumnol is an aluminal salt which contains about 15 per cent. silver and 5 per cent. aluminium. It is a fine white powder, very soluble in water, in glycerine, and in warm alcohol. It is insoluble in ether. Heinz and Leibrecht have already reported on its physiological action, and have shown it to be a harmless, odourless, and antiseptic astringent. The author has used it in more than 300 cases. It was found curative when applied pure to soft chancres and abscesses mixed in the proportion of 10 to 20 per cent.; with inert powders in balanitis, erosions, moist eczemas, etc. One to 5 per cent. solutions were used in moist and papular eczemas, acne of the face, boils, and urethritis. Two and a half to 10 per cent. solution in alcohol was used for the treatment of eczema, urticaria, sycosis, favus, psoriasis of the head and face; and 2½, 5, 10, and 20 per cent. lanolin ointment for eczema, seborrhœa capitis, psoriasis, and favus. Alumnol varnishes were used in papular and squamous eczemas. It was found that alumnol was efficacious in acute superficial inflammatory affections of the skin, as well as in chronic processes in which the inflammation was deeper, and in parasitic diseases (under which head the author includes erysipelas, favus, lupus, soft chancre, erosions, and gonorrhœa) and in acute and chronic inflammations of the mucous membrane.—*British Medical Journal*, 17th December 1892.

SALOPHEN.—Dr Josef Fröhlich (*Wiener med. Wochen.*, July 1892), in an exhaustive treatise on the Therapeutic Application of Salophen, says that in not one out of thirty cases of acute rheumatism did this remedy fail. The pain ceased in from three to four days, and the acute swelling disappeared in six to eight days. Large joint effusions were, however, not influenced. Salophen, like the other salicylic preparations, cannot prevent relapses. In two cases acute endocarditis appeared during the treatment.

The author says that salophen is a prompt and efficient remedy in acute rheumatism, and is to be preferred to the salicylates, because (1) being decomposed in the intestine it does not irritate the stomach; (2) it can be given in large doses and for a long period without unpleasant effects, such as loss of appetite, nausea, vertigo, or collapse; and (3) it is tasteless. The action of salophen upon chronic articular rheumatism was not constant in some cases, but in others it had good effect, and therefore further experiment is worth undertaking. Salophen has very little action as an antipyretic. In one out of three cases of cystitis it seemed to be useful. In only three cases were any unpleasant effects produced, and they were but slight. Salophen is also suggested as an intestinal antiseptic on account of the large quantity of salicylic acid which it contains, but Dr Fröhlich was unable to determine as to this, as suitable material was not at his disposal for experiment; and, further, he states that he was not acquainted with the action of salophen upon pathogenic and putrefactive bacteria. He adds, however, that it would be advisable to institute experiments in this direction.—*The Journal of Nervous and Mental Disease,* October 1892.

ARISTOL.—The following is taken from a paper entitled "Newer Drugs in Dermatological Practice," by Dr Charles W. Allen (*Med. Rec.*) Since I made a report on the use of aristol in skin diseases at the meeting of the American Dermatological Association in September 1890, I have continued to employ it in a variety of affections, and find it of decided benefit in all cases where a granulation stimulant and cicatrizing agent is required. Its value probably depends upon its richness in iodine, containing, as it does, something like 45 per cent. It has the advantage over the newer dermatol in being soluble in oils, ether, and alcohol, though only slightly so in the latter. At the out-door department of Bellevue I have used aristol extensively in the treatment of chancroid, and, contrary to the experience of others and the statements frequently made that it is of no great value in this condition, I must record my experience in favour of it. In lupus, psoriasis, and epithelioma, the action, while it cannot be said to be curative, is highly beneficial. It will remove the lesions of psoriasis, but it does not do the work as quickly and thoroughly as does chrysarobin. I do not believe that a case of epithelioma has been or will be cured by aristol. It may cause cicatrization of an ulcerating cancer, but the disease will still be present. At the last meeting of the American Medical Association, in discussing aristol Dr Keller said: "On epithelioma I am convinced its action is admirably curative, often seeming to cure it rapidly and completely." Now, I am afraid such statements are misleading. The drug does just what Dr Keller says, it seems to cure. If he or any one else can state instances of permanent cure of epithelioma I should be much pleased to know it. I have used aristol extensively in epithelioma, but only in the hope of causing cicatrization in cases gone beyond the operative period, and to cause healing of the wound after operation in the other class of cases. I have only words of praise to use for the drug in this sense, but as a cure for cancer I am unfamiliar with it. The same may be said of lupus. Ringworm, eczema marginatum, ulcers, erysipelas, have all appeared to be influenced favourably by aristol dressings. As an application to mucous membranes, as in the nose, it has given good results, and several cases of syphilis of the nose and ozæna have been much benefited. It is my usual dressing for most of the open lesions of relapsing periods of syphilis. As it is insoluble, whenever a penetrating action is desired, instead of a simple superficial coating of powder, an oily or ethereal solution or ointment should be used.—*Medical Review*, October 22, 1892.

PERISCOPE OF OBSTETRICS AND GYNÆCOLOGY.

By J. W. Ballantyne, M.D., F.R.C.P. Ed., F.R.S.E., Lecturer on Diseases of Infancy and Childhood, and on Midwifery and Gynæcology, School of Medicine, Edinburgh.

Symphysiotomy.—The revival of the operation of symphysiotomy is one of the most striking characters of the obstetrics of the present time, and several cases have of late been reported in which the Cæsarean section and craniotomy have been successfully replaced by the division of the symphysis pubis. Caruso's contribution to the subject (*Annali di Ostetricia*, April 1892), in which were detailed two new cases, and in which a summary was given of twenty-two symphysiotomies practised at Naples within the last five years, has been already noticed in this periscope (*Edinburgh Medical Journal*, September 1892). P. G. Spinelli (*Annali di Ostetricia* for June, July, and August 1892) gives a long and interesting paper on the history of the operation. In this he shows that whilst Sigault was the first definitely to propose and carry out the operation, the idea had been suggested to him by the writings of Pineau, Paré, and others. Sigault's communication appeared in Paris in 1768; the first to write upon the subject in Germany was Loder (1778); it was discussed by Camper in Holland in 1774, by Nessi in Italy in 1779, and by William Hunter in 1780. The operation about that time attracted great attention, but was ultimately almost entirely abandoned, to be revived again only within recent years. For its revival we have specially to thank the Neapolitan obstetricians as represented by Mancusi, Morisani, and Scribelli. Pinard has recently written a paper (*Annales de Gynécologie*, February 1892) in which he strongly recommends the practice of symphysiotomy to the attention of all who may have to deal with difficult cases of labour, and gives high praise to Morisani for the manner in which he has striven to re-establish it in general favour. Leopold (*Centralblatt für Gynäkologie*, No. 30, 1892) reports two cases in which symphysiotomy was practised with the best results for both mother and child. His first patient was 37 years old, had been delivered by forceps of two dead children in previous pregnancies, and in her third pregnancy had had premature labour excited. The conjugata vera measured 6¾ cms., and the woman was a dwarf. After the symphysis had been divided, a separation of the bones to the extent of 7 cms. took place during delivery. Both the bones and the soft parts were brought together with stitches after the child had been born. Leopold's second patient was also 37 years old, and in a previous labour craniotomy had been performed upon a living child. The conjugata vera measured 6¾ cms. After the symphysis had been divided, the child was easily delivered with forceps. A separation of the bones to the extent of 6·5 cms. took place during delivery. The ligamentum arcuatum was not divided. The child was large (51 cms. in length; 3310 grammes in weight). Neither in this case nor in the preceding had the patient any difficulty with micturition after the operation, and in both instances the results were eminently satisfactory for both mother and child. Robert Müllerheim (*Centralblatt für Gynäkologie*, No. 30, 1892; and *Annales de Gynécologie* for August 1892) reports a case in which symphysiotomy was performed upon a woman, 34 years of age, and a iii.-para. Her first child died during labour, and her second was born with the aid of forceps. She had learnt to walk only when 3½ years old, but she showed no signs of rickets. She was small in size, and had a poorly developed skeleton. In her third confinement the first pains came on on April 23rd, 1892; on the 25th the waters came away; and on the 29th she was still undelivered, and was sent into hospital to have the Cæsarean operation performed. The diagonal conjugate measured 10 cms.; but the cause of delay was found to be in the fœtal head, which was large and prematurely ossified. She was three weeks past the full term. The fœtus was still alive, and it was determined to perform symphysiotomy instead of the Cæsarean section. The operation was performed, and the child was born in a state of asphyxia. It was, however, easily resuscitated. All its head diameters were larger than normal: O.M. =14 cms.; O.F.=12 cms.; S.O.B.=10 cms.; Bi-T.=10 cms.; and Bi-P.=11 cms. The circumference was 37 cms. The mother hindered her recovery by getting out of bed without leave, but ultimately got quite well. Tarnier (*Annales de Gynécologie*, August 1892) relates how he performed symphysiotomy in the case of a rachitic woman, 31 years of age, and a v.-para. Her first four confinements were terminated by the breaking up of the fœtal head. Her pelvis was flattened, and had a conjugata vera of 7·5 cms. In her fifth labour symphysiotomy was practised. After the division of the symphysis the parts were separated to the extent of 5·7 cms., and with the help of forceps the infant was easily delivered. It was a male, and weighed 2230 grammes. Both mother and infant did well. Porak (*Annales de Gynécologie*, September 1892) reports a case in which a primiparous woman, 25 years of age, was safely delivered by symphysiotomy at the full term. She had begun to walk when three years old, and was rachitic. Her skeleton showed all the typical characters of rickets. The diagonal conjugate measured 9·6 cms. It was attempted to deliver the child by means of forceps, but the attempt failed. Symphysiotomy was then decided upon, and when the symphysis had been divided a separation of 4 cms. took place. The infant was then easily delivered with the aid of forceps. The sutures were removed on the sixth day, and the wound was found to have healed by first intention. The patient was allowed to rise on the twentieth day; but she had risen without permission on several previous occasions. Her recovery was perfect. Desiderius v. Velits (*Centralblatt für Gynäkologie*, No. 40, 1892) narrates yet another case in which symphysiotomy was performed with complete success both for mother and child. The patient was 21 years old, and in two previous labours craniotomy had been necessary. She was rachitic, the pelvis was flattened, and the conjugata vera measured 7·5 cms. After division of the symphysis some slight traction with Breus' forceps was all that was required to deliver the fœtus. It was a male, 51 cms. long, and weighing 3200 grammes. The fœtal head circumference was 35 cms. There was a little œdema of the labia on the fourth day, and when the stitches were removed on the fourteenth day a small stitch-abscess was revealed. Otherwise recovery took place uninterruptedly.

Technique of the Operation.—It may be well to describe briefly the method of performing symphysiotomy which has been adopted by modern operators. The mons veneris is first shaved, and then both internal and external disinfection are practised. An incision is then made in the middle line of the symphysis, and as the various layers are cut through any bleeding points are secured. A sound is held in the bladder, and the cartilage is divided from behind forwards by means of a probe-pointed curved bistoury. The ligamentum arcuatum may or may not be divided. Sometimes an Esmarch's bandage is placed round the pelvis to prevent a too sudden and too extensive separation of the parts. The head may then be born naturally, or forceps may be used to facilitate its delivery. The cartilaginous surfaces are then brought into accurate contact, some sutures are introduced either through the skin alone or through both the hard and soft parts, and the wound is treated antiseptically. The knees are tied together, and the urine drawn off with a catheter.

FORCEPS DELIVERY DURING THE LAST FIFTY YEARS.—Dr J.

G. Swayne makes an interesting contribution to the literature of forceps delivery, by detailing his experiences during a period of fifty years' obstetric practice. His views on the use of forceps in primiparæ are specially noteworthy, and he lays down the general rule, that although the general symptoms may be quite favourable, the head ought never to be allowed to remain arrested in the pelvic cavity for more than two hours without applying the forceps. With regard to the instrument employed, it is rather surprising to note that Dr Swayne does not appear to have given a trial to the axis-traction forceps.—*Bristol Medico-Chirurgical Journal*, September 1892.

THE INFLUENCE OF PARTURIENT LESIONS IN THE CAUSATION OF PUERPERAL INSANITY.—Dr G. H. Rohe reports four cases in which uterine and vaginal lesions (perineal and cervical tears) were followed by puerperal insanity. In two of the four cases recovery followed the operative treatment of the lesions, and in the other two there was considerable improvement, the mental disorder becoming much less objectionable and serious in type. The writer concludes that puerperal insanity is, in at least the large majority of cases, an infection psychosis; and that, without rejecting the influence of other factors, such as heredity, anæmia, exhaustion, mental shock and distress, careful observation will show that few cases of this disease occur without preceding or coincident puerperal infection. His reasons are: that puerperal insanity usually occurs at the same period at which infection is met with, that it is usually accompanied by elevation of temperature, that it is of the acute and delirious type, that the death-rate is higher than in simple mania, that autopsies and examinations during life usually reveal the existence of pelvic lesions, and that the results of operations seem to show that the removal of local sources of irritation increases the chances of recovery from the mental disease.—*The Journal of the American Medical Association*, July 16, 1892.

FŒTAL SKELETON IN A DERMOID CYST.—Répin describes an ovarian dermoid cyst on the inner wall of which was a protuberance with four extremities attached to it. Under a thick layer of adipose tissue were the bones of four imperfect and quite recognisable limbs along with a large bone containing teeth. A loop of intestine was also found along with a salivary gland. The author concludes that all ovarian dermoids are due to the inclusion within one of monochorionic twins of its deformed brother.—*Annales de Gynécologie*, August 1892.

OCCASIONAL SURGICAL PERISCOPE.

By Alexis Thomson, M.D., F.R.C.S.E.

In the *International Medical Magazine* for August of last year there is a paper by Professor Senn of Chicago on "Elastic Constriction as a Hæmostatic Measure," a subject of practical interest to all operating surgeons. After referring to the dangerous and now discarded method of emptying the limb of blood by the elastic bandage, and to the equally efficient and now generally adopted method by simple elevation of the limb *after* the patient is completely under the influence of the anæsthetic, it is strongly urged by Senn that the constrictor should not be a tube or cord, but a flattened elastic band, at least one inch in width, of which at least two turns are to be applied side by side, with sufficient firmness to interrupt at once both the arterial and the venous circulation, and the pressure being first made on that side of the limb occupied by the main bloodvessels. Among the complications which may result from elastic compression, or rather from its faulty use, are temporary loss of muscular power and nerve paralysis, from direct injury to the muscles, to the nerves, or both. Senn refers to two cases in his own practice,—one of musculo-spiral paralysis from constriction applied above the elbow, the other of the peroneal, immediately above the knee-joint, the paralysis in the latter case still persisting after two years. It is therefore recommended that a site for the constrictor should be selected where the nerves are well protected, that a wide band should be employed, and that one or more layers of gauze or lint should be interposed between the constrictor and the limb. It having been suggested that prolonged elastic constriction retards the healing process by lowering the vitality of the tissues, Senn made a series of experiments to determine this point, using for constriction a rubber tube ¼ inch in diameter. The results showed that in most of the experiments (which were performed on dogs) where the constriction was maintained for more than two hours, that the limb was either rendered useless, or that the animal walked lame for a number of days; the temporary disability was regarded as being due to injury of the constricted muscles. In the cases where the loss of function was continued for several weeks there appeared to have been produced, at the same time, a nerve-lesion which interfered with recovery until a sufficient time had elapsed for regeneration of the nerve to take place. The nerves examined in these cases showed all the appearances of far-advanced degeneration.

SURGICAL PERISCOPE.

By Kenneth M. Douglas, M.D., F.R.C.S. Edin.

Acute Suppurative Peritonitis.—Mr Southam (Manchester) reports a case of apparently idiopathic suppurative peritonitis, with symptoms of intestinal obstruction, and recovery after abdominal section. The symptoms—pain, vomiting (latterly fæcal), and obstruction—arose six days before admission to hospital; on admission the abdomen was generally distended, tympanitic, and very tender, with no localized tumour or unnatural fulness anywhere, and no evidence of tubercular disease. Three years ago there had been a similar, though less severe attack. On opening the abdomen pus was found to be present in all parts, and especially in the pelvis; the cæcum and appendix were examined, but there was nothing to show that the disease had originated there; the pus was free from fæcal odour, and there was no gas in the peritoneal cavity. Recovery took place without a bad symptom. Subjoined to the paper is a table of 124 cases of acute peritonitis, compiled by Mr Kelynack, showing the rarity of cases such as that recorded by Mr Southam. Fifty-one of these cases were undoubtedly suppurative (probably more); sixteen followed or were associated with perforation or rupture of some part of the alimentary tract; twenty-eight cases were in their origin intestinal. "The experience of the Manchester post-mortem theatre, at least during the last ten years, . . . would probably tend to confirm the statements of those observers who deny the possibility of an acute primary peritonitis." —*Medical Chronicle*, July 1892.

Excision of Cancer of the Rectum.—Dr M'Cosh (New York), in a paper on this subject, addresses himself more particularly to the question, whether, in this procedure, there is a point higher than which we must not venture, and if there be such a limit, where is it? He indicates the two modes of treatment advocated in doubtful cases,—the palliative by colotomy, to which British surgeons incline, and the radical treatment adopted largely by German operators. Dr M'Cosh apparently holds a position between these two views, and reports five cases occurring in his experience within the past three years. He adopts a posterior (or sacral) incision, if needful removing the bone in part. If in removing the disease the peritoneum be opened, Dr M'Cosh makes no attempt to close the opening, but packs the wound with iodoform gauze; he believes it better to suture the rectum to the margin of the wound, thus guiding fæcal matter to a point of exit, but does not hold that the preservation of the lower part of the rectum and the sphincters has been proved to yield a better result. In the five cases recorded in the paper, portions of gut, varying from 3 to 10 inches in length, were resected. While the greater mortality of these operations as compared with that of colotomy is admitted, it is claimed—(1), that permanent cure may be obtained (regarding as in this category all cases in which after four years there is no return of the disease), and of 375 cases reported, 32 were found free from recurrence at the end of four years; (2), that even if disease returns, the life is prolonged to a greater degree than after colotomy; (3), that after repeated excisions cure may finally be obtained; (4), that greater relief is afforded. Dr M'Cosh concludes that the mortality of the operation is about 19 per cent., that cases can be successfully operated on when the disease extends higher than the peritoneal attachment, that probably about 11 per cent. of the cases are permanently cured, and that longer and more comfortable life is given by excision than by colotomy.—*New York Medical Journal*, September 3, 1892.

HÆMORRHAGE AFTER SUPRAPUBIC PROSTATECTOMY.—Dr Keyes (New York) recommends an efficient means of arresting this hæmorrhage when ordinary means—pressure, ligature, cautery, forcipressure—are not suitable, or when the loss of blood is especially to be dreaded from the state of the patient. His method is to plug with an antiseptic graduated tampon the prostate and prostatic urethra, by traction either through the urethra or through a perineal incision; the tampon is provided with a central silk thread for traction, and with four threads at the corners for its removal when desired. Dr Keyes has adopted the method twice, with the result that no blood was lost after the dressing was placed. The plug was removed in one case in twenty-four hours, in the other in thirty-six. In neither case was there any considerable complaint of its pressure.—*Medical Record*, September 17, 1892.

THE VALUE OF FORCED INSPIRATION IN OPIUM NARCOSIS.—Dr Fell in his paper urges anew upon the profession the extreme value of his method of treatment (by forcing air into the lungs either with the face-mask, or after tracheotomy) in cases of opium narcosis and other conditions, where death is imminent, and where ordinary artificial respiration yields no prospect of resuscitation. The paper is illustrated by six additional records of cases.—*Journal of American Medical Association*, July 30, 1892.

TREATMENT OF SPINA BIFIDA BY EXCISION.—Dr Powers (New York) contributes a paper embodying the report of a case of spinal meningocele in an adult treated by removal. The tumour was in the lumbar region, and the patient applied for treatment on account of increasing loss of power in the legs. Dr Powers has found in the literature only three recorded cases of spinal meningocele treated by excision in adults, but appends to his paper a table of thirty-one cases so treated at all ages, with a mortality of seven deaths due directly to the operation, *i.e.*, 22·58 per cent.

These cases extend over the last seven years, during which period Dr Powers can trace fifteen cases treated by Morton's injection, with four deaths, a mortality of 26·66 per cent.—*Medical Record*, July 16, 1892.

NEPHRECTOMY.—Three successful cases are recorded in the *Boston Medical and Surgical Journal*, September 15, 1892. (1.) Case of calculous pyclo-nephritis (Dr Cushing) in a female, aged 46. The tumour was very distinct in the right flank. Removal was effected by abdominal section (incision in right linea semilunaris), the fluid contents being evacuated before removal. Recovery was satisfactory and uneventful. (2.) Cancerous kidney, removed by laparotomy (Dr Mixter). Patient, a male, aged 60, whose earliest symptom was hæmaturia, and in whom the tumour (left kidney) was very readily felt and recognised. It proved to be cancer of a glandular type, and was wholly confined to the kidney, having probably existed only a few months. (3.) Large cyst of kidney (Dr E. Cushing). Patient, a female, aged 42, suffered from a tumour which had existed since she was 16, which enlarged considerably at intervals of three or four weeks, this change being accompanied by abdominal pain, nausea, and vomiting. A diagnosis of wandering cystic kidney was made, and as an attack of greater severity than usual occurred, the abdomen was opened and the cyst punctured by a trocar. "More than a gallon of foul urine was evacuated," and as the kidney apparently was wholly disorganized, it was removed without any special difficulty. The wound healed by first intention, and five months after operation the patient was well.

PERISCOPE OF SYPHILIS AND GENITO-URINARY DISEASES.

By FRANCIS CADELL, F.R.C.S. Ed.

LATE SYPHILIS.—This article by Dr Conner appears in *Medical News*, January 23, 1892. Referring to bone and joint lesions he says:—Though a very large proportion—nine-tenths or more—of chronic bone-disease and joint-disease, in the child, the adolescent, and the young adult, is tuberculous, yet the cases in which it is of syphilitic origin are by no means few. They are recognised,—1. By location. The lesion is in all probability in a long bone, not an irregular one, not a vertebra, not in the tarsus or the carpus, but in the tibia (and this above all others), or in the femur or a phalanx. If in the long bone it is much more probably in its diaphysis than in the epiphysis. Take away the cases of affections of the articulating extremities of the femur, the tibia, the humerus, the forearm bones, how many cases of tuberculous disease of the long bones would remain? 2. By recognition of traces on the cornea, the teeth, or the skin, of previous syphilitic affections, and that, too, perhaps in one markedly hard of hearing, and evidently feebly developed. 3. By application of the therapeutic test. 4. When practicable, by inoculation. Of course if it can be determined that one or both parents were syphilitic before the patient was born the difficulties of diagnosis are greatly lessened. In one-third of the cases of tertiary syphilis decided disturbances of motion, sensation, or the intellect are observed. Male brain-workers are the most often affected. The development of nervous lesions in them is greatly favoured by alcoholic excesses. Debility and malaria are also exciting causes. The new growths occur in the more vascular regions of the nervous tissue, and therefore are much more often found on or near the surface than deep in the substance of the nervous mass. The various morbid phenomena observed—the pains, convulsions, pareses, paralyses, vertigos, failures of the special senses, disturbances of sleep, of thought, of memory, coma—are in themselves in no respect different from those produced by non-syphilitic causes. The new growths, whether in the meninges alone or in both envelope and cortex, are not so dangerous as the limited cerebral softenings caused by the anæmia consequent on vessel-obliterations or plugging, or the specific irritation changes outside of the infected area. The author does not agree with the opinion of Mr Horsley, expressed at the Berlin Congress, that the only chance for the patient affected with a gumma of the brain was excision. The affections of motion, of sensation, and of the intellect are frequent, in the order given. The first are present in every case; the second, except as neuralgias and headaches, are comparatively rare. The third form but a small part of the lesions under observation. The disturbances of motion may show themselves either in increase or in diminution of movement, in convulsions or in paralysis. It is in the interim between the time of the attacks of childhood and of approaching old age that the syphilitic seizures occur. Brain-syphilis, in any of its manifestations, is comparatively seldom seen in women, and the hysterical disorders of sensation are not present. The paralyses are much more common, and are of graver import than are the convulsions, since they are indications of more extensive new growth or more destructive lesions of adjacent parts. Pareses rather than paralyses exist in many cases; these motor disturbances are strangely combined, often intermittent, not seldom one-sided, passing at times from one side to the other, either quickly or only after the lapse, it may be, of many months of marked improvement, or even of entire relief of symptoms. Coming on slowly as a rule, with no antecedent apoplexy, preceded oftentimes by prodromal cephalalgias of decided, even of intense severity; frequently, on the other hand, associated with no material disturbances of sensation. They are often associated with marked affection of the speech-centre, or at times with disturbances of the special senses. The special senses share, but in a much less degree than might be expected, in the sensory disturbances of the intra-cranial affections. In by far the larger number of cases of specific blindness and deafness, the producing lesion is located in the orbit or in the ear. Enfeebled mental action, especially on the side of memory, is often simply an expression on the part of the cerebrum of the general depression that syphilis always produces. In a limited number of cases, the psychic disturbances are much more positive. The subjects of them become unfit for business, are excessively irritable, markedly melancholic, actively maniacal, or even seemingly demented. Syphilitic coma may come on in those in whom the syphilitic disease is active or latent. It may terminate in speedy death, or in recovery, which is often followed by recurrent attacks, sooner or later destroying life. Even permanent relief may be expected and secured by a prompt and vigorous mercurial treatment. The author does not believe there is any causative relationship of syphilis to locomotor ataxia. Spinal lesions are of infrequent occurrence both actually and as compared with cerebral lesions. Aneurism in comparatively young subjects, under forty, is in very many cases due to syphilis. As one of its marked effects the specific disease produces unquestionably endarteritis; and though the inflammation especially attacks the medium-sized and smaller vessels, it is not limited to them, and the weakening of the walls that it produces cannot but predispose to fusiform or sacculated dilatation. He thus concludes:—"If it be possible, sanitarians and political economists have before them the task of working out some practical and practicable plan of controlling the spread of this disease, that damages the young, weakens the strong, infects the innocent, diminishes the results of labour, increases the poor-rates, keeps down the population—that is everywhere, and in all respects, destructive to the private and the public weal."

THE TREATMENT OF SYPHILIS BY INJECTIONS OF SERUM.—Only two observers—Tommasoli and Sartori—have as yet tried this method of treatment. The data are somewhat meagre, but it would appear that, although neither author has as yet applied the treatment to a case of tertiary syphilis, it is likely to prove equally efficacious in such a case. The serum must be prepared with every precaution necessary to secure the asepticity of all vessels and instruments employed. The blood must be allowed to flow direct from a divided vessel into a flask which has been previously sterilized by heat, care also having been taken to render the surrounding parts of the animal as aseptic as possible. The flask is about half filled, then plugged with cotton wool, and placed in a cool place in order to allow the serum to separate from the clot. For this purpose it is more convenient to stand the flask in a slanting position, as this facilitates the subsequent withdrawal of the serum. The dose at first should be about 2 or 3 c.c., but may afterwards be raised to 6 c.c., and should be repeated with frequency proportional to the tolerance of the patient. A daily use is not recommended. Severe disturbance may generally be put down to septicity of the serum employed, and this can always be avoided.—*British Medical Journal*, November 19, 1892.

WHITE PATCHES IN THE MOUTH: SYPHILIS AND SMOKING.—Erb (*Münch. med. Woch.*, October 18th, 1892) discusses the relation of these white patches (leucoma, etc.), which he calls *Plaquesnarben*, owing to their frequent connexion with mucous plaques. When investigating the relation of syphilis to locomotor ataxy, the author collected 240 such cases, only two of which occurred in women. In 154 of the 240 the patches were present at the angles of the mouth alone, and in 204 in other parts of the mouth as well as at the angles, whereas in only 9 cases were they seen on the tongue alone. Syphilis was known to have occurred in 191 of the 240 cases. Of the remaining 49, 21 could not certainly be said never to have had syphilis, 8 had scars on the tibiæ and other signs, though they denied syphilis, and 6 had either spinal myosis or tabes dorsalis. Thus, in four-fifths of the cases syphilis was present, and in 4 or 5 the patches disappeared under anti-syphilitic treatment. In one-tenth to one-fifth of these cases there was no history of syphilis. In regard to smoking, only 148 cases were investigated, 47 of which occurred in slight or non-smokers, and 101 in moderate or heavy smokers. Of the same 148 cases, 100 had had syphilis, 64 being heavy smokers, and 36 slight or non-smokers. Of the remaining 48 non-syphilitic cases, 11 were slight or non-smokers, but 5 of the 11 were doubtful in regard to syphilis. In the 148 cases syphilis was present alone in 36, smoking alone in 37, syphilis and smoking together in 64, and neither one nor the other in 11. Erb concludes—(1) that syphilis and smoking respectively may produce these patches about equally; (2) that generally both factors are present; (3) that the patches are very rare if both be absent; (4) that smoking alone can produce them if in great excess, and especially strong cigars; and (5) that in the presence of syphilis a much less degree of smoking suffices. The author is also inclined to admit a predisposition in the mucous membrane. If these patches occur in slight or non-smokers, and no other cause exist, syphilis is nearly certain to be present. In moderate smokers a suspicion of syphilis raised by other symptoms is strengthened, and treatment should be adopted. In the case of heavy smokers much caution is needed in drawing conclusions.—*British Medical Journal*, December 3, 1892.

Part Fifth.

MEDICAL NEWS.

A LONDONER'S IMPRESSIONS CONCERNING THE EDINBURGH ROYAL INFIRMARY.

THE importance of the following article and the eminent authority of its author justify us in, with much pleasure, transferring it in its entirety to our columns:—

"It is an education to spend a few days at Edinburgh in the very pleasant occupation of studying the administration of the Royal Infirmary. There can be no doubt that, viewed from every aspect, and examined by the eye of experience, the Royal Infirmary, Edinburgh, at the present time is a hospital of which the British nation, as well as the citizens of Edinburgh, may be justly proud. There is nothing quite like it in any other part of the British Empire, and it has a prestige all its own. In every department the same spirit of thoroughness and *esprit de corps* makes itself felt. We take it that if the average pessimist could be made to understand a little of the details of hospital administration, and then be brought to Edinburgh, and caused to realize the work of each member of the staff of the Royal Infirmary, from the honorary physician and surgeon to the humblest worker in the wards, he would find it very difficult to keep up his pessimism. Everybody seems to feel that it is an honour to belong to such an institution, and that they must individually take care that nothing on their part shall be wanting to contribute to the success of the whole machine.

"It is always instructive for the trained administrator to visit and carefully inspect great institutions. When the administration is as good as human devotion to duty can make it, then the pleasure and instruction are greater than words can adequately describe. We felt at Edinburgh, as we felt last year at the Johns Hopkins Hospital, Baltimore, that it was a great privilege to be called to work in either of these institutions. The effect upon the *morale* of the staff must be fruitful for good. Whether the workers' stay there be long or short, its influence is likely to affect them favourably throughout their whole life. The knowledge of this should make every thoughtful man or woman zealous of the good name and progressive development of our great medical institutions. Their influence for good, apart from the immediate object which they fulfil, is enormous when rightly understood. Inefficiency and failure to secure the best, for the want of a little enterprise or the expenditure of a few pounds, should be regarded as a defect which it is incumbent upon public opinion to remedy without delay. At least, and as a mere act of justice, we are bound to declare, that the excellent scientific work, and the efficiency of the administration at the Royal Infirmary, Edinburgh, must have a marked influence for good, not only upon those who labour, but also upon those who suffer within its walls. Edinburgh has good reason to be proud of this great institution.

"*Character and Cost of the Work.*—It would be an act of supererogation to give a detailed description of the buildings of this great pavilion hospital in these columns to-day. Suffice it to say that the wards are admirable, and that the plan of providing separate small wards in juxtaposition to the larger ones, together with rooms for clinical and other purposes, is a good one. It was pleasant to notice that every sister was not only proud of her work, but that, with the earnest and continuous co-operation of the physician or surgeon in charge, each sister aims to make her own ward the brightest and most attractive of the whole establishment. This friendly rivalry produces on the whole a result which is surprisingly satisfactory. We feel that hospital managers might usefully take a leaf out of the book of the asylum superintendents, and that when the time comes round to have the wards re-decorated, care should be taken that the decorations in each ward should differ from those in other wards, and that they should harmonise and be made as attractive and pleasant as possible. These effects can be obtained without much, if any, additional outlay, the one thing necessary is the presence of someone who has enough knowledge of decoration and sufficient taste to secure the best effect possible. Rightly understood, there can be no doubt that the tasteful decoration of a hospital, which should always present the brightest and most cheerful aspect it is possible to attain, cannot fail to have the happiest results upon the patients, whose recovery is thereby hastened, and upon the visitor, who experiences so sincere a pleasure that he cannot resist the temptation of asking to be allowed to contribute—and to contribute liberally—to the maintenance of an institution which exhibits at a glance the maximum of care and the presence of an earnest desire to make the house of suffering as attractive and pleasant as possible. Of course, although the wards at Edinburgh are bright and pleasant to look upon, although they contain many flowers and pictures, still much more is capable of being done in the way of effective decoration. Such a development will no doubt have its effect upon the appearance of the whole of the interior of the Royal Edinburgh Infirmary in due time.

"Turning now to the cost of the work, we find from the last report that there is a tendency in Edinburgh as elsewhere for the cost per bed to increase. The attention now paid to cleaning, decoration, special appliances used for heating and lighting, replacing the old by new and better furniture, and improved nursing, all tends to force the expenditure upwards. Six hundred and forty-eight beds were constantly occupied, and the average period of residence was from 23 days in the Lock Hospital to 27 days in the ordinary medical-wards, being an average of 26·9 days per patient. Altogether 8769 in-patients were under treatment, of which 3878 were medical and 4281 were surgical cases. The cost of each occupied bed in 1891 was £62, 10s., compared with £58, 16s. for the previous year. Despite this increase the cost of food per occupied bed has remained stationary at £20, 4s. 5d. per bed. The invested property of the Infirmary under all heads amounts at the present time to £296,158 in round numbers.

"*The New Nursing Home.*—We have been led to refer above to hospital decoration by the fact that the new Nurses' Home, now nearly complete, which will be opened shortly, has been erected upon the right principle, and promises to be the most pleasant building which has yet been erected as a residence for nurses. For example, nearly all the rooms are made to differ a little in shape, all have been decorated in carefully varied colours, the roof of the corridors on the first floor has been so constructed as to give a most pleasant effect to the eye, and the floors will be covered, we understand, with Brussels carpet. Now the public may laugh, but it is perfectly accurate to say that Brussels carpet, rightly used, may be made an education in itself. It gives a sense of pleasure to those who are constantly moving about in a building of this character; it tends to make the whole establishment quiet, and free from unnecessary noise, and, by exciting a feeling of satisfaction amongst those who reside in the home, cannot fail to raise the *morale* of the whole staff. Realizing all this, and having by practical experience learned its importance, we do most heartily thank those who are responsible for the plans, the interior decoration, and the furniture of the Nurses' Home of the Royal Edinburgh Infirmary, for the important service they have rendered to nursing in this country. No praise can be too high for such devoted vigilance as has been shown by Surgeon-General Fasson, the late superintendent, whose recent death has caused a feeling of sorrow throughout all the workers in the Infirmary, and Miss Spencer, the very able lady superintendent. There is, we know, a feeling among better educated ladies who become nurses that there is only one place after all for which they should make, and that place is London. The inspection we have made of the larger hospitals on the eastern side of England and in the chief towns of Scotland convinces us, however, that the time is not far distant when this feeling will be largely discounted by the fact that the accommodation provided, and the character of the work afforded, to nurses in the larger centres of population all over the country, are now so good, that anyone of these ladies ought to be proud to have charge of any of their great institutions.

"*Nurses and the Public Institutions.*—Much inconvenience has been caused for years to the nurses of all grades at the Royal Edinburgh Infirmary. They have had to sleep in large numbers in the roofs of the pavilions, being scattered all over the establishment, and their comfort and happiness have consequently been sorely interfered with. Still the nurses had confidence that those who were in authority were doing all they could to relieve this discomfort, and it is highly creditable to the institution that there has never been a single word of complaint of any kind or description. We commend this circumstance to the notice of those who are so fond of stirring up discontent. It is quite clear that in a large establishment, especially when the buildings are old, the difficulties of meeting the just requirements of everybody become at times almost insurmountable. Still, if there is one thing connected with the administration of the medical institutions of this country to-day about which there can be no reasonable doubt, it is that, nearly everywhere, the governing body take the warmest interest in the staff, and that on the whole they are most desirous of doing everything that is reasonable to secure their comfort and to promote the happiness of every individual worker. If nurses, for example, could only realize their best interests, they would certainly follow the course adopted by the nurses at Edinburgh of patient endurance and trust, because it is the wisest for them to follow on every ground. A nurse after she has left the hospital where she was trained is still an object of interest to the authorities, because the reputation of the institution is largely wrapped up in her future work and conduct. This truth we hope that the public may speedily come to see and to act upon when they employ nurses in their private houses. All they have to do when they require a nurse, is to communicate with the matron of the nearest hospital, or to obtain one from a recognised institution, and to ask her to produce a certificate of training. Then, if anything goes wrong, they can trust the matron at the hospital to secure a thorough investigation and a just decision on the points at issue. Every nurse must know that she is not likely to secure from strangers anything like the measure of justice she will get from her own hospital authorities, because their interests are her interests, and for all practical purposes both are identical. Any person or association which labours to disturb this feeling, or to prevent the course indicated from being universally adopted, should be discountenanced by the public, and avoided by every nurse of experience and common sense.

"*Special Features.*—In the course of our visit we went through the laundry, which is small for the immense amount of work that has to be done. Despite this, everything was in order, and the colour of the linen and all other articles which had been washed was remarkable. We have never seen anywhere more excellent work, and can only wish that it was possible to get washing done in London as it is done at the Edinburgh Infirmary, and, for that matter, at all the Scotch hospitals which we visited, where they have a laundry of their own. The system at Edinburgh is to place the laundry in charge of a superintendent, and Miss Spencer has certainly been most fortunate in her selection of a lady for this post. Her intelligence, her full mastery of detail, the excellence of the results she secures, and the quiet and rapid way in which the work proceeds, are beyond praise. The whole of the kitchen, too, is under the management of a woman cook, a fine specimen of her class, who seemed to enjoy the work, although it is most laborious at times. The stores, too, were excellent, and the arrangements for their issue, and the care which is evidently taken in their selection, were most satisfactory. Everywhere, as we have said, *esprit* reigns supreme, and so the character of the work is uniformly good. We think the managers would be well advised were they to deal once and for all with the out-patient department. This is a blot at the present time on this great hospital at Edinburgh. It is altogether wrong to allow out-patients to hang about the wards until they can be seen by the medical staff. Such a system would not be tolerated elsewhere, and it is very surprising to find it remains at Edinburgh. The dangers of infection and the other drawbacks attending this practice must be patent to all. We mention it because we feel that the time has arrived when the out-patient question should be faced and settled upon right lines without delay."—*The Hospital*, Dec. 10, 1892.

DR WORCESTER, in the *Medical Record* for August 1892, calls attention to what he believes to be a fallacy in Sir J. Crichton Browne's comparisons of the weights of male and female brains. The writer says, "He compares the height of men and women with the weight—that is, the mass—of their brains. But it is one of the first principles of mathematics, that the mass or bulk of similar bodies varies as the cubes of their corresponding dimensions. If, for instance, we suppose a man 4 feet and another 8 feet in height, similarly proportioned in all respects, every organ of the latter, including the brain, should weigh, not twice, but eight times as much as of the former. He gives the average heights of the sexes, as shown by his measurements, as 1·702 metre for men, and 1·575 metre for women. The respective cubes of these dimensions are 4·913 and 3·852, a difference of 27·7 per cent. of the latter number in favour of the male. This is not, I think, very far from the actual difference in body-weight of the sexes, allowing for the state of nutrition. But the difference in brain-weights is only 127·68 grammes, or 10·44 per cent. of the average weight of the female brain. The comparison, so far as it has any value, is decidedly in favour of the latter."

A NEW PROFESSORSHIP IN JEFFERSON MEDICAL COLLEGE.—At a meeting of the Board of Trustees held on Wednesday, November 30th, 1892, Dr G. E. de Schweinitz was, on the unanimous recommendation of the Faculty, elected Clinical Professor of Ophthalmology in the Jefferson Medical College. At the time of election, Dr de Schweinitz was Professor of Ophthalmology in the Philadelphia Polyclinic and Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania.

THE PALACE OF TRUTH.—OLD MOTHER HUBBARD IN LUCK.—We learn that the new Committee on Relief of Poor (City Council of Richmond) has appointed Dr ——— surgeon to the City Almshouse Hospital. The idea of associating the name of this weakling with the word surgery is enough to provoke a hearty laugh among those who know anything of his want of attainments. The truth of the saying, "a fool for luck," is fully verified in this appointment. [We omit the name in case of an action. What a sensation such a paragraph would make in this country.] —*The Southern Clinic.*

CORRESPONDENCE.

(*To the Editor of the Edinburgh Medical Journal.*)

PADDINGTON INFIRMARY, LONDON, W.,
Decr. 12th, 1892.

SIR,—I am obliged by your notice of my work *On an Epidemic Skin Disease*, which appears in your issue of this month.

I do not think that the disease is a "new disease;" but any one reading your otherwise flattering notice would receive the impression that the disease had been previously described.

I shall be much obliged if you will refer me to any recorded description of the disease prior to my letter to the *Lancet*, dated July 27, 1891, when I first drew professional attention to the subject; or even prior to the date of reading my paper before the Medical Society of London on Novr. 30, 1891.

The following statement appears in Mr Jonathan Hutchinson's *Archives of Surgery* for January 1892, p. 221:—"It will be remembered that it is to Dr Savill that the credit is due for having drawn professional attention to these remarkable outbreaks." But of course we may have overlooked the reference your reviewer has in mind.—Believe me, etc., THOS. SAVILL, M.D. Lond.

[The expression "not a new disease" was used in consequence of a statement in Mr Hutchinson's *Archives of Surgery*, October 1891, p. 151, when giving a description of his visit to the Paddington and Marylebone Infirmaries, for the purpose of seeing those suffering from the epidemic. He says,—"The first case (at Marylebone) had occurred, I was told, in May; as, however, the disease is always one which is more or less prevalent, it is difficult to speak with accuracy of a first case." With this observation in mind, emanating from one who had seen many of the cases, we were led to express the opinion that the disease was not a new one; but at the same time it is due to Dr Savill to add, that he was unquestionably the first to draw attention to the epidemic prevalence of this strange malady.—THE REVIEWER.]

Part First.

ORIGINAL COMMUNICATIONS.

I.—PREMATURE SEXUAL DEVELOPMENT IN RELATION SPECIALLY TO OVARIAN TUMOURS, WITH AN ILLUSTRATIVE CASE OF OVARIAN SARCOMA IN A CHILD OF SEVEN; LAPAROTOMY; RECOVERY. With a Photograph, Chart, and Microscopic Section of Tumour.

By J. Halliday Croom, M.D., F.R.C.P. Ed., F.R.S.E., Physician to the Royal Maternity Hospital; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 12th December* 1892.)

Prior to a detailed description of the patient under consideration in the present report, it may be of some interest if I place before you a rapid survey of cases of a similar nature which have been recorded.

Precocious menstruation with associated premature sexual development, although by no means unique in its occurrence—as the medical literature of this country, of the Continent, and of America attests—is yet of sufficient rarity to invest it with at least a transient interest to the observer when such an anomaly does present itself.

After a perusal of the available literature at my hand, I have tabulated the cases found recorded under the following heads, and have, where the case seemed one of more outstanding peculiarity, shortly epitomized its history.

1. Precocious menstruation with an early appearance of the external manifestations of puberty.
2. Sexual development without menstruation.
3. Menstruation previous to development of the sexual organs.
4. Early conception and pregnancy.
5. Premature sexual development associated with tumours of the generative organs.

1. One of the most striking cases illustrative of this group is the oft quoted one of De Beau recorded in the *American Medical*

Journal, vol. xi., and appearing in the *London Medical Gazette;* to which statement he considered it advisable to append the signatures of four physicians, a mayor, and a British consul.

The history is as follows:—"Matilda H. was born on the 31st December 1829. She came into the world with her mammæ perfectly formed, and the mons veneris covered with hairs, as much as a girl between 13 and 14 years old. When precisely 3 years old, the catamenia made their appearance, and have continued to appear regularly every month until the present time (1832), and as copious as any woman might have them, each period taking 4 days. . . . . . Her mammæ are now of the size of a full-grown orange; and the dimensions of the pelvis are, in my opinion, such as to enable her to bear children when 8 years old, and very likely sooner."

In the *Northern Journal of Medicine* for 1845, Campbell reports a case where the catamenia set in a few days after birth, and occurred regularly at periods of 3 weeks and 2 or 3 days. This continued till she died at the age of 4 years. The post-mortem appearance was like that of a girl of 10 or 11, the mammæ and external genitals having the appearances proper to puberty. The development of the pelvis and of all the deep-seated genitals was very considerable.

R. B. Smart, in the *Medico-Chirurgical Transactions* for 1858, gives a table of eight recorded cases, and describes in full detail a case coming under his observation, with two accompanying photographs of the patient. The catamenia in this girl appeared at 3 years and 6 months, and the down on the pubis shortly antecedent to that.

In the *Gazette des Hôpitaux* for November 1876, Bouchat narrates the history of a girl, Nelly O., and the appearance she presented at the age of 4 years. She had been born with the breasts notably enlarged, commenced to menstruate at the age of 22 months, and at the time of examination presented the appearance of puberty as regards her breasts and genitals. Menstruation in her case was very regular in its recurrence, lasting 4 to 6 days, and equivalent in quantity to that of an adult.

In an article on "Early Puberty" in the *American Journal of Obstetrics*, Dr Harris classifies precocious menstruation under two varieties,—1st, Occurring during infancy; 2nd, Between the ages of 7 and 13 years; and records a case coming under his own observation of a girl in whom menstruation appeared at the age of 9½ years, and in whom the other evidences of puberty manifested themselves.

In the *British Medical Journal* for June 1880, C. E. Harle records the result of a post-mortem examination on a child which had commenced to menstruate at the age of 5 months, and this returned regularly till the 14th month, when the child died of diarrhœa. The pudendum was large and clothed with hair; the uterus was large, the os patent and the lips congested, the vessels of the broad ligament were injected, and both ovaries were cystic.

The other cases I have noted under this category are the following:—

Author.	Menstruation commenced.	External appearances.
Sir Astley Cooper in *Med. and Chir. Trans.*, 1813.	3 years.	In breasts, axillæ, and on pubes.
Thomas Embling in *Lancet*, 1848.	2 years.	Mammæ and pubes.
Dr Aveling in *Lancet*, 1866, gives a reference list of 16 cases by different observers.		
Prochownik in *Archiv für Gynæk.*, 1881.	1 year.	In breasts, axillæ, and on pubes. Internal organs not enlarged.
Berry in *Medical Press* for 1882.	5 years 4 months.	Breasts and genitals.
A. van Denveer in *Am. Jour. of Obstet.*, 1883.	4 months.	Mammæ greatly enlarged.
Four of the following cases are cited by Pozzi in his *Gynécologie*.		
Cabade in *Gaz. Med. de Paris*, 1883.	8 months.	Rapid development.
Wallentin in *Dissert. inaug.*, Breslau, 1886.	1½ years.	
Casati in *Il. Raccoglitore*, 1886.	6 years.	Rectal examination, *utérus pubère.*
Diamant in *Intern. Klin. Rundschau*, 1888.	6 years.	Extl. genitals.
Jagoe in *New York Med. Journ.*, 1889.	2 years.	Extl. genitals.

Table of Cases of Ovariotomy in Infants and Girls under thirteen, mainly from Bland Sutton.

Reporter.	Age.	Reference.
Küster.	1 year 8 months.	*Deutsche Med. Woch.*, 1883.
J. F. Hooks.	2 years 6 months.	*Am. Journ. Obstet.*, vol. xix.
Kidd.	2 years 11 months.	*Obstet. Journ.*, Gt. Brit., vol. viii.
Alcock.	3 years.	*Lancet*, 1871, vol. ii.
Schwartz.	4 years.	*Arch. für Gyn.*, vol. xiii.
Thomas	3 years 5 months.	*Am. Journ. Obstet.*, 1880, vol. xiii.
Thornton.	4 years.	*Med. Chir. Trans.*, vol. lxx.
Boldt.	4 years.	*Proc. Path. Soc.*, New York, 1888.
Mears.	6 years 8 months.	*Phil. Med. Times*, 1871, Nov. 1st.
Ewens.	7 years.	Unpublished.
Thornton.	7 years.	*Brit. Med. Journ.*, 1881, vol. ii.
Lucas.	7 years.	*Trans. Clin. Soc.*, London, vol. xxi.
Halliday Croom.	7 years.	*Edin. Med. Journ.*, Feb. 1893.
Cupples.	7 years 6 months.	*Richmond and Louisville Medical Journal*, 1875 (see *Edin. Med. Jour.*, vol. xx.)

Table continued on next page.

Reporter.	Age.	Reference.
Spencer Wells.	8 years.	*Brit. Med. Journ.*, 1874, vol. i.
Leopold.	8 years.	*Arch. für Gyn.*, Bd. vi.
Chenoweth.	8 years 6 months.	*Am. Journ. Obstet.*, vol. xv.
Peaslee.	9 years.	*Ovarian Tumours*, p. 59.
Malins.	9 years.	*Lancet*, May 1890.
Dickinson.	10 years.	*Trans. Path. Soc.*, vol. xxv.
Wagner.	10 years.	*Arch. für Klin. Chir.*, Berlin, 1884, vol. xxx.
Emmet.	10 years.	*Am. Jour. Obstet.*, vol. xiv.
Halliday Croom.	11 years.	*Obstet. Trans.*, Edin., vol. xiv.
Jouon.	12 years.	*Gaz. Heb.*, 1869.
Barlow & Marsh.	12 years.	*Clin. Trans.*, London, vol. xi.
Keith.	12 years.	*Brit. Med. Journ.*, 1878, vol. ii.
Lee, Robert.	12 years.	*Medico-Chir. Trans.*, vol. xliii.
Griffiths.	12 years.	*Trans. Path. Society*, London, vol. xxviii.
Schultze.	12 years.	*Deut. Zeitsch. für Prakt. Med.*, 1876.
Wegscheider.	12 years.	*Beiträge z. Geburt. u. Gyn. der Geburt. Ges.* in Berlin, 1870.

2. The indication of a sexual prematurity, as manifested by the outward signs on the breasts and pudenda, unaccompanied by a menstrual discharge, is unusual. Few instances of this have been noted, but that described by William Cook in the *Medico-Chirurgical Transactions* for 1813 is distinctive enough.

"Louisa Flux was born in 1802. Up till her fourth year she was remarkably thin, but apart from this there was no abnormal feature. The external pudenda now became prominent and covered with a quantity of dark hair. Within four months of her death, which occurred on October 1st, 1809, she began to suffer from convulsions, after which she increased enormously in weight, and her complexion became florid. Her cheeks were downy, and her lip was covered with so much hair that it might be said she had a beard. Her voice, formerly shrill, now became strong, and her whole contour was that of puberty except the breasts and the general stature. The post-mortem appearance: No change had taken place in the internal organs of generation, the ovaries and uterus not having received that increase of size which is usual at puberty. The mons veneris and labia pudendi were as prominent as at perfect puberty, and covered with long, black coating hairs. Menstruation had not taken place."

3. Menstruation occurring without any change in the genitals is not so unusual as the preceding, but even thus it is rare for a child to have the catamenia established for a period of years without other phenomena presenting themselves.

Pozzi in his *Gynécologie* cites Bernard's case reported in the *Lyon Médical*, 1887, of a girl who menstruated regularly from birth up to the age of twelve years without any development of her external genital organs.

In the same class may be included those cases noted by the following authors:—

Allbut in the *Royal Med. and Chir.*, 1866, where the menstrual discharge occurred periodically until the youthful patient died of exhaustion.

Clarence Harding in the *Lancet*, 1879, reports that in a family of two daughters both suffered from a periodic discharge, hæmorrhagic in character, and in the elder of whom the discharge vanished, only recurring when puberty was established.

4. Many remarkable instances of early pregnancy have been put on record by trustworthy authorities, the majority of which cases in this country have occurred after the age of twelve.

There is, however, in Continental literature no great scarcity of pregnancies reported as occurring at a much earlier period.

The following table of cases which I have collected from various sources has been arranged in precedence of age. The majority at least bear evidence of being reliable.

Author.	Reference Work.	Development.	Menstruation.	Impregnation.	Delivery.	State of Child.
Müller.	*Cyclop. of Obst. and Gynec.*	Excessively at birth.	2nd year.	8 years.	Instrumental, 8–9 months.	Dead.
Schmidt.	*Essais Historiques*, 1779.	Sexual organs developed.	2nd year.	..	8 years 10 months.	Full term, dead.
Bodd.	..	..	1 year irregular, 7 years regular.	..	8 years 10½ months.	..
Molitor.	..	Hair on pubis at birth.	4th year.	8 years and 8 months.	Premature, 5th month.	Fœtus—a 8 months'.
Dodd.	*Lancet*, 1881.	Pubes and axilla covered with hair.	12 months.	8 years and 10 months.	..	Weighed 7 lbs.
Rowlett.	*Trans. Med. Jour.*	A few weeks after birth.	12 months.	9 years and 3 months.	10 years.	7¾ lbs.
Bayliss.	*Brit. Med. and Surg. Jour.*, 1846.	..	9 years and 10 months.	..	10 years and 8 months.	Alive, weighed 8 lbs.
Roberton.	*Midwifery.*	..	..	12th year.	12 years and a few months.	..
Smith.	*Lond. Med. Gazette*, 1848.	No history.	10 years.	11 years.	12½ years.	Fully developed.
May.	*Lancet*, 1880.	..	Once before conception.	..	13 years.	Well developed.
Heywood Smith.	*Brit. Med. Jour.*, 1881.	..	12 years and 6 months.	12 years and 8 months.	13 years and 4 months.	..
Wilson.	*Edin. Med. Jour.*, 1861.	No precocity.	..	12 years and 9 months.	13 years and 6 months.	Full grown.
Chapman.	*Assoc. Med. Jour.*, 1856.	..	..	13 years and 1 month.	13 years and 10 months.	Full grown.

5. It has been asserted that among the causes tending to produce changes in the sexual apparatus peculiar to puberty we should include neoplasms affecting, or related to, the internal generative organs. This would appear, however, to be far from the usual rule, and rather the exception. With a view to ascertaining the frequency of this occurrence I have examined the records of twenty-six laparotomies performed on children under puberty, and in one case only does there seem to have been signs so marked as to arrest the attention of the operator so far as to give a description of the child's appearance. On this occasion the narrator and operator was Mr R. Clement Lucas.

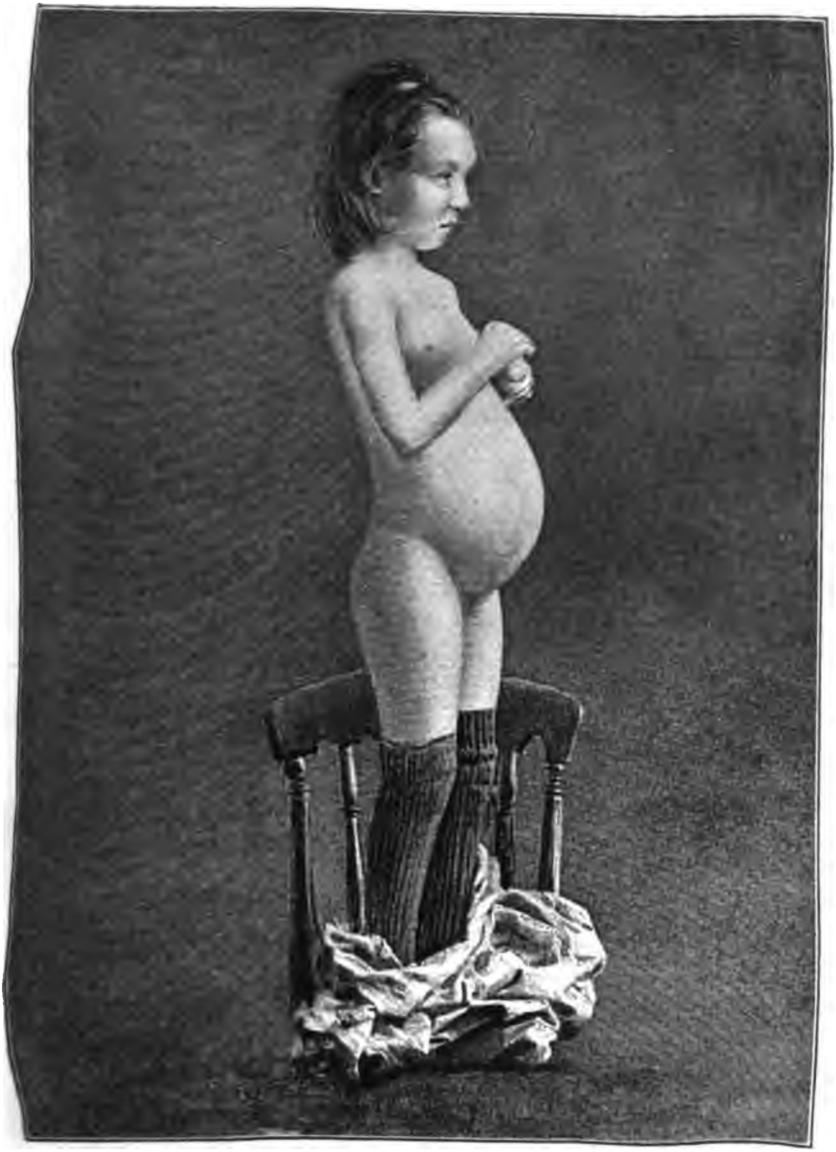
Besides this, Dr Keith remarks regarding one of his patients, a girl of 13, that she was very tall, and had an unusually large quantity of black hair on her head, about the genitals, and on the pubis. She had never menstruated. Mr Lucas gives his report in the *Clinical Society's Transactions* for 1888.

The child was aged 7, and had had a hæmorrhagic discharge from the vagina, which recurred whilst she remained in hospital. The mammæ were firm and about the size of oranges, the mons veneris of unusual elevation, and covered with hair about 1 inch in length. There was a tumour of the right ovary, which was removed, and the child made a good recovery. The vaginal discharge disappeared and the mammary prominence subsided before leaving hospital.

The case which formed the basis of this paper was sent to me by Dr Forsyth of Eyemouth. Her history was as follows:—She was a child of 7 years of age, suffering from a large abdominal tumour. Previous to March of this year she had been perfectly well, presenting no abnormal symptoms whatever. In this month she was raped by a boy on several occasions. Immediately thereafter she had a profuse hæmorrhagic discharge from the vagina, which continued almost uninterruptedly until her admission to hospital in the month of November, viz., seven months. Shortly after the rape her abdomen began to swell and gradually enlarged, until on her admission to my ward she had a tumour about the size of a seven months' pregnancy, with the following measurements,—vertical 7½ inches, transverse 7¼, left oblique 8, right oblique 7½.

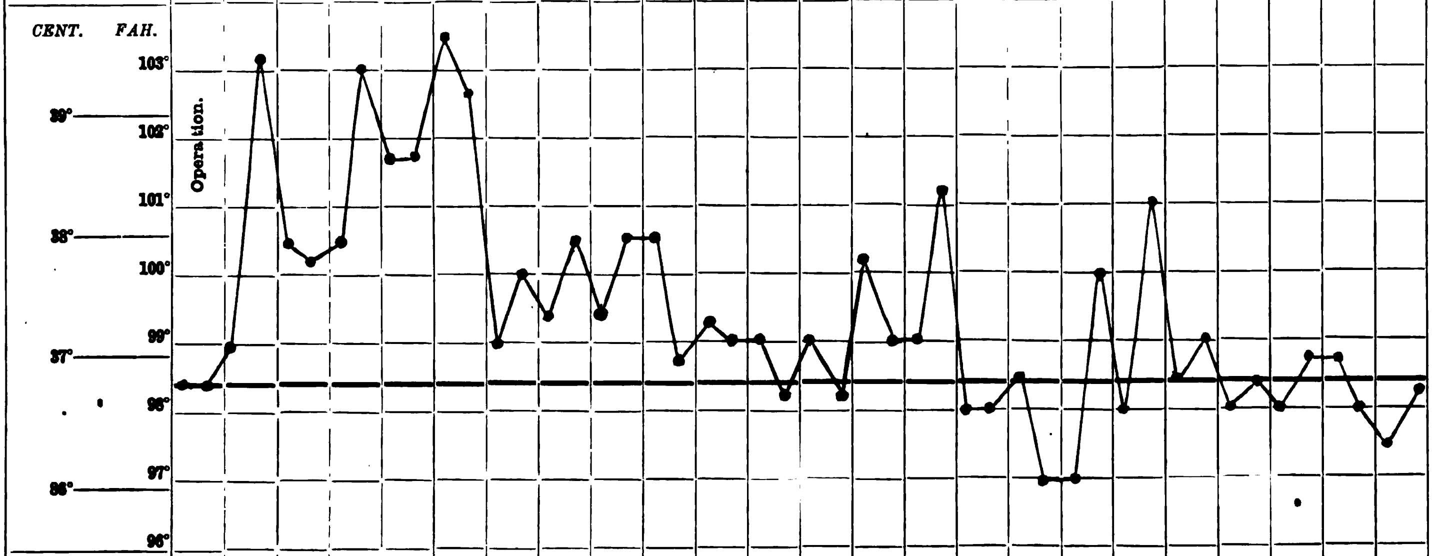
The impression on her admission to hospital was, that the tumour was a pregnancy, notwithstanding her extreme youth, and this was very considerably emphasized by the fact that her mammæ were largely developed, that there was a well-marked linea nigra passing from the umbilicus to the pubis, that there was a copious development of hair over the mons veneris and the external surface of the labia majora, as shown in the accompanying Illustration, and that a well-marked bruit could be heard on both sides of the tumour.

The tumour was freely movable, tense, and firm, but had appar-

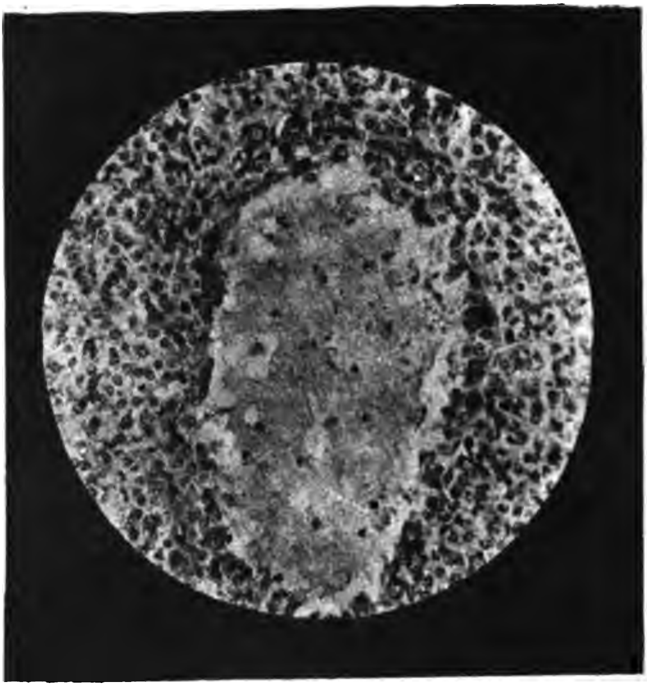


Records of Temperature, Pulse, Respiration, and Stools, from 25th day of November 1892,

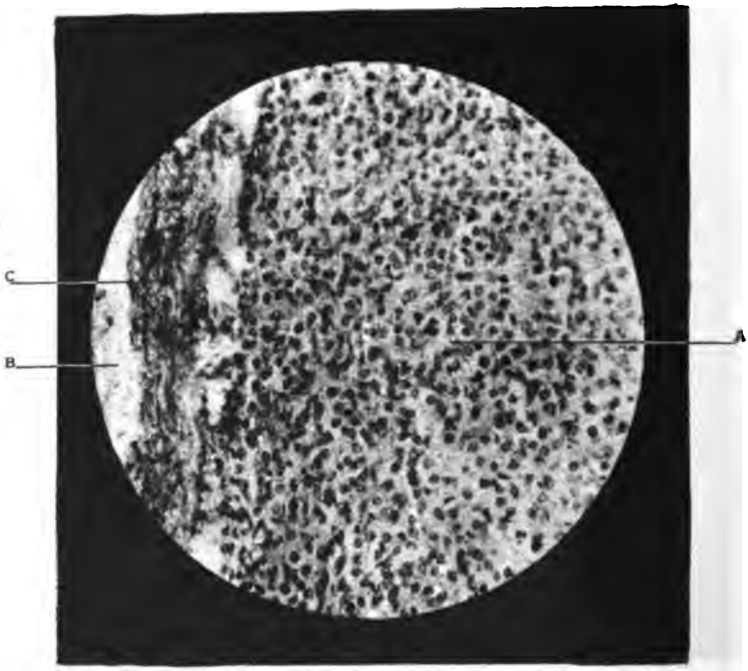
In the Case of M. N., aged 7.



DAY OF MONTH.	Nov. 25	26	27	28	29	30	Dec. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PULSE.	96	104	112	120	130	140	120	108	104	100	94	92	86	90	76	94	80	76	82	90	80	90	85	76
RESPIRATION.	30	34	29	34	40	30	28	27	30	26	20	20	20	24	21	28	28	26	20	20	20	20	20	20
STOOLS.	0	0	0	0	0	1	0	1	2	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1



PORTION UNDERGOING MUCOID DEGENERATION.



A. ROUND SARCOMA CELLS.

B. GRANULAR, WITH HERE AND THERE SLIGHTLY FIBRILLATED INTERCELLULAR SUBSTANCE.

C. FIBROUS SEPTUM.

ently no intimate connexion with the pelvis. This want of connexion with the cavity of the pelvis, as well as its absolute solidity, notwithstanding the apparent indications otherwise, decided me against the possibility of pregnancy. Under anæsthesia, therefore, I examined the patient per vaginam, and found the remains of the hymen thick, but completely penetrated, the vaginal walls being smooth, and the cervix enlarged, very soft, and somewhat patulous. The sound was then introduced into the uterus, which was found to be enlarged, being slightly over 3 inches. This manipulation caused free hæmorrhage. The possibility, then, of pregnancy in a bi-horned uterus naturally presented itself; but a prolonged examination of the patient—by no means an easy matter in a child—satisfied me that the tumour was unconnected with the uterus, as this organ could be mapped out bimanually, and the conclusion arrived at was that it was a pediculated ovarian.

In considering the question of pregnancy the pelvic measurements were taken, and found to be—

Interspinous,	8	inches.
Intercristal,	8¾	„
External conjugate,	6¼	„

It is specially noteworthy that the development of her pubic hair, the uterine hæmorrhage, and the growth of the abdominal tumour, as well as the appearance of the linea nigra, were all phenomena entirely subsequent to the interference with her genital organs, and therefore apparently consequent upon her rape. In the same connexion it is well to observe the mother's statement, that the mammæ were enlarged to such an extent at birth that the development of mammary abscesses was feared. This goes far to show that the child had a tendency to precocity in development which only required the stimulus of the repeated sexual acts to mature the activity both of the uterus and ovaries. Her mental development was rather under average.

The operation was undertaken on the 25th November. On cutting through the abdominal parietes the bluish surface of the tumour at once indicated its true character. There was some degree of ascites. The tumour was aspirated, but only a small quantity of sero-sanguinolent fluid was withdrawn. There were no adhesions, and the tumour was perfectly free in every direction. The abdominal incision had to be enlarged up to within 1½ inches of the ensiform cartilage, owing to the fact of the tumour being absolutely incompressible. It was removed through the abdominal wound, and found to be attached to the left side of the pelvis by a long pedicle, which was secured in the ordinary way. The Fallopian tube was greatly distended and tortuous. The ovary on the opposite side was quite small and undeveloped. The tube on the same side was hypertrophied. The uterus was enlarged, corresponding to the dimensions indicated by the sound previous to operation. The abdominal wound was closed, and the child made an uninterrupted recovery. The accompanying Chart will show the usual temperature curve in ovariotomy performed on children.

The tumour weighed over six pounds. Its surface was smooth and soft, and its walls were very vascular. In its substance were a number of cysts separated by loose septa, which were very fragile. The cystic contents were gummous or gelatinous and transparent fluid. The microscopic appearances were those of a rapidly growing round-celled sarcoma with mucoid degeneration of parts, which the accompanying Micro-photographs sufficiently delineate.

On the 11th January 1893, and subsequent to the reading of this paper, the child was examined under chloroform before dismissal from hospital. The mammary outline is much less distinct, and the dark areola has somewhat faded. The linea nigra is less distinct, but there appears to be rather an increase of hair on the pubis. The labia minora, which had been large and dark, have now assumed a normal size and colour, and are less gaping; while the vaginal mucous membrane, previously dark and injected, has become of a normal pinkish colour. On vaginal examination the cervix is found to be small and closed, and to have resumed its infantile form. The sound now only enters to the extent of two inches, being a full inch less than before operation, and there is no hæmorrhage from the vagina.

II.—THE DISORDERS OF SPEECH.

By John Wyllie, M.D., F.R.C.P.E., Lecturer on Medicine in the Edinburgh School; one of the Ordinary Physicians to the Royal Infirmary, Edinburgh.

Part III.—Speech in its Relations to Diseases of the Nervous System.

1. *Speech in its Relations to Insanity.*

As the peculiarities of speech in Congenital Imbeciles have been already pretty fully discussed, that subject need not be included in the present paper. It is the other class of insane persons that I now wish to treat of: persons who at one period of their lives have been sane, and in the full possession of the faculty of intelligent speech; but who are now insane, their minds having, in one way or another, become disordered or degenerate.

I think it desirable at the outset that we should, as clearly as we can, distinguish between the faculty of Thought and that of Language. They are so closely and intimately bound together that it is difficult or impossible to draw between them a strict line of demarcation. Damage done to the one tells in most cases more or less unfavourably upon the other. The union, indeed, is so intimate, that, as we have already seen, there are philosophers who would have us believe that there can be no thought without speech and no speech without thought. That view, however, is not one that seems to me to derive any support from the study of the language of imbeciles, deaf-mutes, aphasics, and insane persons. The study of such cases, on the contrary, seems distinctly to strengthen the more generally accepted view, viz., that, however natural it may be for thought to embody itself in speech and in the other forms of expressional language, and however difficult it may be to draw a line of demarcation between the one and the other, they are yet in their essence distinct. Thought, intelligence, mind, are terms which we use synonymously to indicate the highest endowment of the brain. Language, though so wonderful in itself, must take a lower place. It is the instrument of thought, the magic mirror in which a man may look and read the thoughts of another person, or into which he may cast his own thoughts for another's information. It was by the mind's own efforts that the mirror was originally polished and made efficient; and it is only by the mind's constant attention that it can be kept in good order for daily use. When the mind is damaged, the mirror truthfully reflects a damaged and distorted image. When the mirror is damaged, the reflected image of the mind is not a good and true one; it is blurred, if not distorted, owing to fault in the reflecting power of the mirror.

There are facts, however, in the relationships of the two that this familiar metaphor gives us no help in understanding. Such, for example, are the Morbid Activities that are assumed, in certain cases, by the Cerebral Organs of Speech, independently of the will, and sometimes in spite of any inhibitory power that can be brought to bear upon them. When the strong correcting and controlling influence of a healthy mind is no longer exercised upon the organs of speech, a variety of Speech Hallucinations may be developed. Voices may be heard, or Writings may be seen upon the wall; or Motor Hallucinations may be developed in the motor centres; and these last may become Impulsions, and compel the patient to ejaculate words or phrases involuntarily, or even in spite of every effort to suppress them.

It is further to be noted, that, in conditions of Dementia (loss of mental power) the function of thought seems often to decay more rapidly than the function of articulate speech; so that even when thought has been reduced almost to zero, the speech organs may yet retain their articulative power, and be able to produce, automatically, words and phrases that had been stored up within them in happier times. Here, again, the disorder of speech does not quite keep step with the advancing disorder of the mind.

But these semi-independent actions and changes in the speech organs, though important in themselves, play, on the whole, but a secondary part. In the majority of cases of mental disease they are not prominently exhibited. The function of language, in the majority of cases, shows little independent activity of this sort. Its activities are, for the most part, in strict correspondence with those of the mind, whose disorder it mirrors with striking fidelity. Still, these independent or semi-independent activities of the speech-organs deserve to be carefully studied, as they are not only important but extremely interesting. They, however, render the subject that we have now to consider more complicated than it would otherwise be. On their account chiefly it will be expedient for us to look at the Speech of the Insane from several different points of view. I propose therefore:—

(1.) To make the Mind our first standpoint, and to give a few illustrations of the faithful manner in which the disorder of the mind is mirrored in the speech of the patient.

(2.) To treat of Speech-Hallucinations and other disorders of action that are met with in insanity in connexion with disturbances of the cortical speech-centres.

(3.) To treat separately of the affections of speech in Dementia; showing how, in such cases, the decay of speech is slower than the decay of thought; and how, in some of them, the disease of the mental cortex spreads downwards into those cells of the cortex that form the executive motor centres for articulation, thus causing the appearance of an ominous paralytic element in articulation, that is of the greatest significance both diagnostically and prognostically.

Illustrations of the manner in which Language mirrors the condition of the mind.

"Observation," says Griesinger,[1] "shows that the immense majority of mental diseases commence with a state of profound emotional perversion, of a depressing and sorrowful character. Guislain was the first to elucidate this highly interesting fact, and make it at all serviceable. Of its general correctness, there can be no doubt; and we can have no hesitation in speaking of a *stadium melancholicum* as the initiatory period of mental disease. Of course, there are exceptions. Thus in senile dementia, in periodic mania, in meningitis, in the mental diseases consecutive to typhus fever, pneumonia, cholera, sunstroke, etc., the outbreak of mania is generally observed without being preceded by melancholia; but the cases are much more frequent in which the *stadium melancholicum* only *appears* to be absent, because it was less intense, and was not then recognised as a stage of mental disease."

Probably many persons have had experience of the *stadium melancholicum*—the debatable land between sanity and insanity—

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[1] *Mental Pathology and Therapeutics* (New Syd. Soc.), p. 210.

who yet have never passed over the border into the state of pronounced insanity. When the disastrous passage is made, the patient may either, on the one hand, sink deep into the depression of true Melancholia, or, on the other hand, pass into the condition of Mania, and become unnaturally exalted in his thoughts and emotions. In some cases, again, there is a rotation which presents alternately the conditions of melancholia and mania, the *Folie Circulaire.* In others the mind goes wrong only in some limited and partial way: there may be Moral Insanity, for example, in which deterioration is exhibited chiefly or solely in the sense of right and wrong; or there may be Monomania, in which a single delusion on some particular subject alone betrays the insanity.

A. MELANCHOLIA.—In true melancholia all forms of outward expression exhibit the profound mental suffering of the patient. The condition has been aptly described as one of mental pain, and in acute cases the suffering may be most pathetically expressed. "The patient," says Griesinger, "bewails himself, heaves deep sighs, and is engaged in prayers and supplications, but always on the same subject."[1] Often there is much motor excitement. "The patients," says Dr Clouston, in speaking of excited (motor) melancholia, "rush about, are violent to those about them, wander ceaselessly, walking up and down like tigers in a cage; or roll on the floor, or wring their hands, or shout or groan, or tear their clothes, or in their cries, attitudes, and motions express loudly their mental pain. In short, the muscular expression of the prevailing emotion is strong, and uncontrollable by volition."[2] In chronic cases, the same features may be presented, although their manifestations are less violent. The patients may continue to bewail their condition for years. In the Royal Edinburgh Asylum I was lately shown a case of this kind, the patient being a middle-aged woman with prematurely gray hair. Her constant cry is to be taken to jail, where she may expiate, by suffering imprisonment, the fearful crimes she imagines herself to have committed. The tones of her voice are curiously deep and strong, —so much so, that when I first heard them from a neighbouring ward I could not tell whether it was the voice of a man or of a woman. They had evidently been deepened by their habitual expression of painful and sombre emotion.

But there are many varieties of phenomena exhibited by different cases of melancholia, according to its degree of intensity, and to the various kinds of delusion and hallucination that are associated with it. These varieties of type I shall not attempt to enumerate, but I think it may be well to make note of one special type that in its expressional manifestations contrasts remarkably with the violence and excitement of ordinary acute melancholia. I mean the variety of melancholia known as "Melancholia with Stupor;" a condition that sometimes supervenes upon the acutely violent type, and sometimes is developed primarily. In this variety the sufferer is the picture of silent despair. He seems lost in a fearful dream, and sits silent and immobile, perhaps listening to the internal utterances of the evil spirits by which he often imagines himself to be possessed. He may not utter a single word even for years. If he do reply to questions, it may be slowly, and often in a whisper. There is often a pause before his reply, owing to the feebleness and slowness of all mental action that is not devoted to the delusional ideas with which the mind is possessed. Sometimes the enfeebled will is not capable of producing even a whisper, though in the attempt to speak the lips may slightly and silently move. Often there is no response at all, not even this slight movement of the lips. The attention cannot be roused from without; it is wholly concentrated within, upon the mental suffering, or upon delusions or hallucinations. Such a case, on superficial examination, might be mistaken for one of dementia; "but the glance of such a patient," says Griesinger, "does not indicate the nullity proper to dementia; it expresses a painful emotion—sadness, or anxiety, or concentrated astonishment."[1] I saw lately, in the Royal Edinburgh Asylum, a female patient suffering from this variety of melancholia. She was silent, but her eye was not vacant of expression. I was informed that if the nurses left the patient for a moment she would immediately attempt to commit suicide. She had many times been caught in the act of making such attempts. Melancholia with stupor may gradually pass into the condition of true and permanent Dementia.

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[1] *Op. cit.*, p. 227.

[2] *Clinical Lectures on Mental Diseases*, p. 90.

All classes of melancholia are peculiarly apt to be troubled with speech hallucinations. They may hear voices, or they are conscious of being prompted internally by thoughts which seem to them to be articulated within some part of their own body. I shall have something more to say about those hallucinations in the second part of this paper.

The Facial Expression in cases of melancholia varies according to the variety of melancholia that is presented, but it is always faithfully indicative of mental suffering. In acute cases the features are expressive of violent excitement and mental agony; in melancholia with stupor, they denote the condition of dull despair. Darwin has treated fully of facial expression in conditions of grief and despair; but as we do not require detailed descriptions in order to be able to recognise such expressions on the human countenance, it will not be necessary here to enter upon any description of them. I shall only make a note of one point of special interest. It is that according to Sir James Crichton

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[1] *Op. cit.*, p. 247.

Browne, who contributed some observations on the point to Darwin's work on the *Expression of the Emotions*, the "grief muscles" are especially often seen to be in a state of contraction in melancholia in patients who have hypochondriacal delusions about the condition of their internal viscera.[1] These "grief muscles," as Darwin has called them, are the corrugators of the eyebrows, and their elevator, the occipito-frontalis. When these muscles act together, they form a horse-shoe wrinkle on the middle of the forehead, the convexity of which is upwards. In long-continued cases of melancholia the expression of mental suffering gets stereotyped on the countenance, and the lines expressive of it often get deepened to a marked degree.

B. MANIA.—In Acute Mania the excitement is often extreme. Loud speech and violent motion of the body may be incessant Hurry, excitement, incoherence, and incessant noise are the characteristics of acute mania. The characters of the speech are well summed up by Esquirol. He says, "Speech, given to man to express his thoughts and affections, betrays the disorder of the intelligence of the maniac. His thoughts present themselves in crowds to his mind, press upon each other, push each other aside *pêle mêle*. Thus words and phrases escape from his lips without connexion, without consecutive order, and with an extreme volubility." This may be taken as the usual state of matters in the most acute cases. Referring to cases less acute, the same authority goes on to say, "Some maniacs, full of confidence in themselves, speak and write with facility, and make themselves remarkable by the *éclat* of their expressions, by the profundity of their thoughts, and by the most ingenious association of ideas. They pass, with the greatest rapidity, from expressions the most affectionate to insults and to threats; they pronounce words and incoherent phrases that have no agreement with their ideas and actions; sometimes they repeat for several hours together the same word, the same phrase, the same passage of music, without appearing to attach to it the least meaning. There are some who create for themselves a language quite peculiar; others, in speaking of themselves, never do so except in the third person. Sometimes the maniac takes a tone of bombast and vanity, and holds himself at a distance. Nothing being able to fix his attention, he yields to the fugitive desire of the moment, and directs himself towards an object that he may not be able to reach. Diverted in his course, though it be rapid and precipitate, he suddenly arrests himself, dreaming and pensive, and seems to be preoccupied with some plan. He escapes from this state of mind immediately, runs with speed, sings and cries; then he stops himself, his physiognomy takes an expression of joy, he weeps, he laughs, he dances, he speaks in a whisper, in a loud voice; in this unconquerable activity his movements are lively, sudden, uncertain. The movements and the gestures of maniacs, which appear every one more meaningless than another, are but the expression of the exaltation and disorder of the ideas and emotions of these patients."[1]

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[1] See Darwin, *Expression of the Emotions*, p. 193.

In Simple Mania the same characteristics are exhibited as in Acute Mania, but they are greatly toned down. There is incoherence of speech and inconsistency of conduct, with comparatively mild exaltation and excitement. Here is what I got taken down from the mild delirium of a middle-aged woman in the Royal Edinburgh Asylum, who sat talking to herself quietly, and laughing occasionally:—"You're not dead yet. I'll not get you. When I was in York Lane why did you not take the candidate I had then? When you was in Seafield you would not say that to Robert. That beautiful face of thine. When I forget Spittal Street I'll shine. If I'm no religious, can you lift it up in Spittal Street?" If the amount of thought that presumably suggested these sentences were put into the balance, it would evidently weigh as nothing in comparison with the amount of speech produced. This suggests a very important question, viz., the question whether in such cases the speech centres are not to a large extent displaying restless activities of their own that are almost independent of the normal stimulus of thought. I shall refer again to this question in the next part of this paper.

It is generally admitted that the condition of mania is more perilous to the mind than that of melancholia. Mania, more frequently than melancholia, causes the mind to sink into a stupor which is apt to be prolonged into permanent Dementia. Even in cases where there is apparent recovery, the patient has not often completely restored to him his former power of mind and fineness of sensibility. The edge has generally been taken off his intellect, and his affections also have been blunted.

C. MONOMANIA, MORAL INSANITY, ETC.—I do not think it will be necessary to treat in this paper of the speech of patients suffering from Monomania, Moral Insanity, or the other special forms of mental derangement. In fact, nothing could be said about the speech of such patients except that, as in melancholia and mania, it faithfully mirrors the mental condition of the patient. But it does so rather in the meaning of what is said than in the manner of saying it. There is one curious form of monomania, however, of special interest in connexion with speech, that I may be allowed to say a few words about. It is that in which the patient is under the delusion that, for some special reason, it is necessary that he should be absolutely and permanently *taciturn*. Such an individual, though generally insane, is not necessarily so. He may be under a religious vow never to utter a word. Thus we know that the Carthusian monks live in their monastery a life of perpetual taciturnity, and converse with each other solely by gestures and in writing. In other cases the reason for the taciturnity cannot be discovered. Thus Kussmaul tells of a pedlar in Switzerland who, for at least 15 years, carried on his business entirely by means of signs. "For some unaccountable reason he had condemned himself to absolute dumbness." Such cases, however, must be rare. In general, when an individual condemns himself to dumbness, he does so in obedience to some insane delusion. Dr Clouston has recorded a good case of the kind. He says,—"I have a man in the Asylum, D. T. K., who for ten years has never spoken a word, but who, I may say, in all other respects behaves sanely, showing no symptoms of morbid pride or suspicion. He is about the best joiner we have. We know he has a delusion which prevents him speaking, but what it is we can't find out. If he wants instructions about his work he writes, but nothing will induce him to write why he won't speak."[1]

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[1] Esquirol, *Maladies Mentales*, vol. ii. p. 151.

Speaking of this form of mutism, Séglas remarks,—"Often it is a special hallucination which is the origin of the patient's mutism. He hears, for example, an imperative voice which forbids him to speak; and, in spite of all entreaties, he keeps silence. In other cases the mutism is the consequence of a delusional idea, which, moreover, may vary in character. Sometimes it is an idea of unworthiness, of humility: the patient believes himself fallen from his position as a man, and unworthy to communicate by speech with his fellow-creatures. Sometimes it is an idea of expiation: he keeps silence to expiate the imaginary sins that he reproaches himself with. In other cases it is the fear of hurting some one,—of compromising, by speaking, some one that he loves,—that makes him keep silence. A patient under the care of M. Falret, who had shut himself up in absolute mutism, avowed at intervals that it was for fear of compromising his son by speaking. Sometimes this mutism has its source in an idea of hypochondriacal nature: if the patient does not speak any more, it is because he has the idea that he has no longer a tongue, or that his larynx is destroyed."[2]

In curious contrast to this last class of patients are those who speak incessantly, owing to the fear that if they do not do so they will lose the power of speech. "I have known," says Morel,[3] "a lady possessing a certain dose of hypochondria who, fearing to lose the power of speech, believed herself obliged to repeat the same word, the same phrase."

The Action of the Speech Centres in Insanity.

Having in the foregoing remarks endeavoured to illustrate, by a few examples, the fidelity with which the mental disorder of an insane person is mirrored by his speech, I think it may now be of advantage to look at the matter from another standpoint. Instead of fixing our chief attention upon the mind, and observing how its thoughts are expressed in language, let us now fix our attention upon the Cerebral Organs of Speech; and observe how, in cases of insanity, these are operated upon by the mind; and how, in some cases, they seem capable of displaying activities on their own account that are almost or altogether independent of any mental stimulus.

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[1] *Clinical Lectures on Mental Diseases*, p. 260.

[2] Séglas, *Des Troubles du Langage chez les Aliénés*, p. 29.

[3] Morel, *Traité des Mal. Ment.*, p. 300, quoted by Séglas.

In the brains of uneducated people there are only two centres for articulate speech: one for the Hearing of it, and the other for its Production. In educated people, two other centres in the brain have been appropriated and trained for speech purposes, namely, one for Reading, and the other for Writing. I shall say for the present as little as possible about the anatomy and physiology of these four centres, as I hope to take up the consideration of that subject in a future paper. For the present it will be enough to remind the reader that the two receptive centres (those for hearing words and reading them) belong to the class of organs that are sensory in function, whereas the two productive centres belong to the class that in function are motor. Let us then, beginning with the two centres for spoken language, take each of the four *seriatim*, and see if we can gather about each some of the chief phenomena that are, in insane subjects, displayed in its functional operations. In making this attempt I shall avail myself largely of the copious information detailed in the very valuable work of M. Séglas, recently published.[1]

VERBAL HALLUCINATIONS.

1. *The Word-Hearing Centre.*—Among all the gates through which impressions may be made upon the mind from without, the Ear-gate is probably entitled to the first place in point of importance. Through it words first reach the mind, and, with words, knowledge and the possibility of intellectual development. Words that are heard, it is now known, imprint memories or images of themselves in a certain part of the brain—the centre for word-hearing. These images can be revived in the mind, by effort of attention and will. It seems probable that, in the processes of internal thought, we owe, in part at least, our distinct internal perception of the words we are using to this internal revival of their sound-images. In the sane and wakeful condition of the mind, we have no difficulty in distinguishing between a word heard from without and the same word revived from within. In dreams it is different: our critical faculties being then asleep, we dream that other people are talking to us, when we ourselves, by internal revival of word-images, are in reality making all the conversation. There seems to be little doubt that, as in dreaming, so in many forms of insanity, inactivity of the critical faculties renders the

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[1] Séglas, *Des Troubles du Langage chez les Aliénés*, 1892.

mind an easy prey to auditory hallucinations. Yet this is evidently not the whole explanation of the matter. It would appear that, in some cases, in which the patient is awake, and in all respects considered sane, words are internally and spontaneously revived, and start into such prominent distinctness as to "exteriorize" themselves, and so be easily mistaken for words that are heard from without. Socrates was accustomed all his life to hear what he considered a Divine voice, which always came to him as a prohibition or warning—never as an instigation to action. Joan of Arc saw visions and heard voices from her thirteenth year; and the voices presently called upon her to act in defence of the Dauphin and her country. She lost faith in herself, as a leader of armies, only when the voices had finally left her. We do not know if Socrates and Joan of Arc, or any of the other eminent historical personages that might be cited, would have put implicit faith in the voices, had they lived in modern times, and known something of the nature of hallucinations. But we know that, in our own times, persons are sometimes met with who are afflicted with voices, although their knowledge is sufficient to inform them of their true nature, and their judgment strong enough to prevent their being imposed upon by them. Séglas records a very interesting case of this kind. After remarking that such cases are common in medical literature, he says,—"Here is a very characteristic case that we have met with in the person of an accountant, aged 38 years, who presented himself as an out-patient at the Salpetrière, complaining of peculiar symptoms which he had had for four months. At the beginning, there were hissings in the right ear; then, insensibly, he began to hear voices in both ears. At first they were confused, like a kind of whispering, now they are distinct; and he recognises usually the tone of the voice of his uncle. Sometimes, he says, he forgets himself and replies. When he is undecided, these voices counsel him. At present, when he reads, he hears pronounced that which he reads, as if some one read aloud at his side; and even when he thinks, his thought is at once formulated aloud in his ear. This phenomenon, at first intermittent, is now continuous. He is conscious of the subjective nature of these symptoms, and says, of his own accord, that they are hallucinations; but he would like to be cured, because he finds it very fatiguing always to hear spoken whatever he thinks or does; and it worries him greatly in his business as an accountant."[1]

It is, however, among the obviously insane that auditory hallucinations are most commonly found. In many forms of melancholia, especially such as are associated with delusions of persecution, in epileptic insanity, in chronic alcoholism, and in mania, nothing is more common than this particular kind of hallucination. The misery of many cases of melancholia seems to be greatly due to the incessant persecution that the patient sustains from the voices. They seldom say things that are complimentary or agreeable. Often they seem to the patient to be the whisperings of enemies who are hatching plots against him. Sometimes they sound in one ear, sometimes in both; sometimes it is one voice always, often there are several; and, among them, the voices of men can be distinguished from those of women. They may sound as if speaking near the ear, or they may be heard in the far distance, perhaps in another country, and the patient may explain that they reach his ear by the telephone or some form of electricity.

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[1] Séglas, *op. cit.*, p. 157.

Opprobrious epithets seem to be, in most cases, the burden of what is said by the voices; but in some cases friendly voices are heard, from time to time, which may take up the defence of the patient, and deny the insinuations that are being made on the other side. I had lately, in the Royal Edinburgh Asylum, an opportunity of conversing with a middle-aged melancholic woman who was troubled with voices. She had been sitting quietly in the room while we were examining other patients, and I had noticed her weep silently from time to time. I asked her presently to tell me why she did so. She told me that it was the voices, a man's and a woman's, which came to her, sometimes from the corner of the room, and sometimes from the window. She proceeded to tell me, with great frankness, what they were saying and insinuating about her; and when I had heard a little of it, I was not surprised that she was feeling aggrieved.

2. *The Word-Speaking Centre.*—This, as already indicated, is the motor centre from which in speech-production are discharged the motor impulses that pass along the speech tract to the medulla oblongata, and thence to the organs of phonation and oral articulation. Reserving, for future consideration, the more detailed discussion of the physiological and anatomical relationships of this centre, I may here ask the reader's attention for a moment to a very important conclusion regarding the function of this centre, and of the motor centres generally, that has now been arrived at by physiologists. The conclusion is that these centres are not purely motor; but are, in fact, as Hughlings-Jackson suggested many years ago, sensory-motor. It seems certain that within them are stored up the memories of past muscular acts, and that these memories are specially recorded in them by the muscular sense, whose cortical centre seems to be in the same portion of gray matter as that for the motor discharge. In building up a memory or picture of any finely co-ordinated movement, other memories are no doubt associated with those imprinted by the muscular sense. Something is contributed, for example, by the tactile sensibility of the skin or mucous membrane; something by the sense of sight; and something, perhaps (though this is doubted by some physiologists), from a memory left in the motor cells by

the motor discharges themselves. (In previous movements of the same kind the motor cells had discharged individually so much or so little nerve force; perhaps they retain the memories of these individual discharges, and are thus enabled, by training, to repeat them with exactitude almost automatically.) Without attempting to discuss the question in detail, I think we may accept the conclusion now arrived at by the most eminent authorities on cerebral physiology, that the centres in the motor cortex are not purely motor, but that they are also sensory, in so far as there are formed within them, from memories of various kinds, images or pictures of all the delicately co-ordinated movements that they are accustomed to produce. These are known as psycho-motor images or pictures, and are to be associated with the motor centres, just as the psycho-sensory images or pictures are to be associated with the sensory or receptive centres.

When we are about to perform any delicately co-ordinated action, say with the hand, we always call up in the mind the psycho-motor picture of the act before we execute the necessary movements. Having called up the picture, we are at perfect liberty either to execute the movements or to refrain from doing so. When we do execute the movements, we may be said to have *exteriorized* the picture.

Now there are conditions of motor hallucination in which these psycho-motor pictures are so vivid and obtrusive, that the patient is tempted, or compelled, to think that they have been exteriorized or executed, when they have not really been so. Everybody knows that when a limb has been amputated, the patient for a time is apt to complain of pain and other sensations that, to him, appear to be localized beyond the level of the amputation, in parts that have really been removed. These may be described as psycho-sensory hallucinations. It is not so generally known that the patient may have hallucinations of *movement* in the same parts. Weir Mitchell has paid special attention to this subject, and describes, for example, some of his patients, after amputation of the arm, as most vividly experiencing movements in the fingers of the absent hand, and as being able at will to perform these imaginary movements, even causing the hand to execute the delicate movements of writing. Of course, these patients were merely calling up the psycho-motor pictures of the movements within the motor centres for the hand and arm; but if the pictures were very vivid, the patient experienced almost or altogether the same sensations as if they were exteriorized or carried into execution.

Now, speech is a very finely co-ordinated action, rendered possible only after long training, and based, like all finely co-ordinated movements, upon the distinct formation of motor pictures. We are all conscious that when we are thinking we are apt to speak internally. Without moving the lips or the tongue, we have the most vivid consciousness of the words that our thoughts are using; and we even recognise in them the same variety of tone and emphasis that they would present if they were spoken aloud. No doubt, therefore, we are using in part the psycho-sensory sound-images of the words; but it is equally certain that we use also at the same time the psycho-motor images. It is said that people may, on the whole, be divided into two classes: the auditory class, who in thought employ chiefly the sound-pictures, and the motor class, who employ chiefly the psycho-motor pictures. The reader can judge for himself whether, in expressing his thoughts internally, he employs the auditory or the motor image, or both combined. If he is specially motor he will have a strong tendency to exteriorize the word-images, so as, in thinking, to whisper or even to talk aloud to himself.

One of the most valuable parts of Séglas's work deals with the hallucinations which are due to the abnormal vividness of the psycho-motor word-images. It is a subject that he has, since 1888, devoted special attention to; and, of late, others have joined with him in the study of it. I can here only give a few brief notes as to the facts that have been brought out by these studies.

Séglas finds that psycho-motor hallucinations are common in various forms of insanity; and that they are especially so among those patients who are under delusions of persecution or of possession by evil spirits. He brings out, in strong relief, the contrast between the patients who are subjects of the psycho-auditory hallucinations already described and those whose hallucinations are psycho-motor. The former hear the voices, the latter do not properly hear voices at all (unless they are also the subjects of auditory hallucinations), but are conscious of internal utterances. They are possessed by spirits (good or evil, but mostly evil), or demons, or enemies, who live within their bodies. If the spirits are bad, they torment the patient by saying things that are utterly repugnant and abhorrent to him, by insulting him in every way, or by hatching plots against him (for several personalities may be represented). If good, the spirits comfort the patient by conversing with him, and inspiring him with good thoughts. The spirits may appear to the patients to live in various parts of the body. Sometimes they appear to inhabit the epigastrium, or some other part of the abdomen. Thence the utterances may appear to ascend to the mouth. Very often the spirit is supposed by the patient to live in the mouth itself—it may be under the tongue—or in the upper part of the throat; and sometimes, when the spirit is supposed to live lower down, it is felt by the patient to ascend to the mouth when it is about to speak.

The whole aspect and expression of the patient suffering from this variety of hallucination are different from those of the patient who hears voices. The latter listens intently, turning the ear to the localities from which the voices are supposed to proceed. This patient has no need to listen with the ear. The utterances are made apparently within his own body. Absorbed in attending to them, he is often found in a state of apparent stupor, with the head bent forward, and the hand pressed upon the chest, to keep the utterances from ascending from the epigastrium.

It is extremely significant of the real nature of these utterances, to find that what is said by the supposed spirits is often (quite involuntarily) articulated audibly by the patient,—sometimes in a whisper, and sometimes aloud.

The hallucinations are really due to the involuntary formation by the patient of psycho-motor word-images; and sometimes these are so vivid that they are exteriorized and involuntarily articulated.

From Séglas's numerous examples I shall select two: one in which the hallucinations are solely psycho-motor, and the other in which such hallucinations are associated with other hallucinations of psycho-sensory nature.

(1.) "A patient, whom we have had under observation at the Salpetrière, supposed herself to be in relation with various celebrated men. At first she conversed with them mentally; they spoke to her internally, in the head, but not in the ear. At such times she felt her tongue move as if she wished to speak. Afterwards she obeyed this solicitation of the tongue, and began to speak under the inspiration of the spirits. She speaks in spite of herself. Her voice at such times is more agreeable than it usually is, and what she says is admirable. It is, as it were, a superhuman power that makes her speak. Lammenais, Paganini, Pinel, speak in this way by her mouth."[1] This is one of the rare cases in which the supposed spirits have had anything agreeable to say.

(2.) "Mlle. L. is pursued by 'injectors,' who say in her ear all kinds of insults. But a little internal voice, which comes from the stomach, puts her upon her guard, saying to her, for example, 'They are trying to poison you, mother!' This little voice makes her move the tongue and open the lips; she understands it by the movements of the tongue. She replies often to this little voice in the same way, by moving the tongue, very much as when one speaks in a whisper. When her thought is in accord with the little voice, she finds that she speaks aloud. She has since found, thanks to this little voice, that she can prophecy, discover thieves, etc."[2]

A great number of cases have, like the last, both psycho-sensory and psycho-motor hallucinations. Séglas believes that in the ordinary progress of such cases the psycho-sensory appear before the psycho-motor. The appearance of the latter he thinks indicative of a more advanced deterioration of brain function than is implied by the existence of the former alone. He holds, therefore, that the prognosis in cases of psycho-motor hallucination must always be very grave.

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[1] Séglas, *op. cit.*, p. 185.

[2] *Ibid.*, p. 187.

3. *The Word-Seeing Centre.*—I do not think it is generally known that among sane people visual hallucinations, of various kinds, are of not very uncommon occurrence in certain circumstances. They may occur, for example, at night, when the individual has reached the border-land between waking and sleeping; and, of course, they form a very important element in dreams. More rarely, a sane person may experience them with exceptional vividness if his brain be exhausted by want of sleep, or by overwork. In such a condition, he may have them when he thinks himself wide awake, if he be in the dark, or merely shut his eyes. I have myself met with several instances: some among my hospital patients, whose illness had produced persistent sleeplessness; and two in professional men, who had been made sleepless by overwork and professional worry. I quite believe that systematic inquiry would show that sleeplessness is capable of producing them in people of any class, though they be possessed of average health. In my experience, the commonest hallucination in such cases is the appearance of a kind of colourless wall-paper pattern, which may possibly be but a partial revival of the image of the wall-paper pattern of the patient's bedroom or sitting-room, but which, I think, is more probably a creation *de novo*, as it may change, like the pattern in a kaleidoscope, while it is being gazed at. In aggravated cases, all kinds of visions appear before the mental eye, and they may be so vivid as to be endowed with natural colouring. An overworked professional man whom I attended had reached this stage; but one sleeping-draught took the colour out of his pictures, and another, on the following night, banished them altogether.

Some years ago I had, in my wards at the Royal Infirmary, two cases: one a middle-aged man with aggravated neurasthenia, the other a boy with chronic meningitis of tubercular origin, which proved fatal after a course of nine months,—both of whom were troubled with visual hallucinations whenever they shut their eyes or were in the dark. In both I could call up the hallucinations by suggestion. At my ward visits, for example, I used to have such conversations as the following with the boy, he keeping his eyes closed in the meanwhile:—"Now, tell me, do you see your mother's cottage?" "Yes, quite well." "Do you see your mother sitting at the door?" "Yes." "Who is with her?" "My little sister." "Do you see the horses passing along the road?" "Yes." "Their tails are tied up with ribbands, are they not?" "Yes." "What is the colour of the ribbands?" "Blue."

I have notes of both cases, but as the hallucinations were not verbal in nature, I do not feel that I am entitled to insert them in this paper. I may add that I have also notes of a third case, in which one of the patients in my ward saw very distinctly, one night, what he took to be the ghost of another patient recently deceased.

Visual hallucinations *of Printed or Written Words* must, one would suppose, be most common among those who are engaged in literary pursuits, and are, therefore, in their daily occupation constantly called upon to look at words, printed or written. Over-fatigue and prolonged sleeplessness in such men ought, one would think, to be capable of producing such verbal hallucinations, especially at times when sleep is being courted in vain. Here is a case in point. In a letter written during his last illness—which was attended with prolonged sleeplessness—the eminent Scottish judge, Lord Jeffrey, describes his experience of these verbal hallucinations, which used to come upon him at night when he was trying in vain to sleep. The description is so good that I shall venture to copy here in full, from Lord Cockburn's *Life of Lord Jeffrey*, the passage that includes extracts from this letter. Lord Cockburn says, "On the same evening he dictated the last letter he ever wrote to the Empsons. In reference to his old critical habits, parts of it are very curious. It was long, and gave a full and clear description of the whole course of his illness, from which he expected to recover, but had made up his mind not to continue longer on the Bench. 'I don't think I have had any proper sleep for the last three nights, and I employ portions of them in a way that seems to assume the existence of a sort of dreamy state, lying quite consciously in my bed with my eyes alternately shut and open' enjoying curious visions. He saw 'part of a proof sheet of a new edition of the Apocrypha, and all about Baruch and the Maccabees. I read a good deal in this, with much interest,' etc., and 'a huge Californian newspaper, full of all manner of odd advertisements, some of which amused me much by their novelty. I had then prints of the vulgar old comedies before Shakespeare's time, which were very disgusting.' 'I could conjure up the spectrum of a close printed political paper, filled with discussions on free-trade, protection, and colonies, such as one sees in the *Times*, the *Economist*, and the *Daily News*. I read the ideal copies with a good deal of pain and difficulty, owing to the smallness of the type, but with great interest, and, I believe, often for more than an hour at a time; forming a judgment of their merits with great freedom and acuteness, and often saying to myself—This is very cleverly put, but there is a fallacy in it, for so and so . . .'"[1]

Lord Jeffrey died, 26th January 1850, æt. 76, on the evening of the day following that on which he had dictated this letter.

Griesinger (p. 90), referring to the frequency with which such hallucinations of the senses occur in sane people, especially between sleeping and waking, and noting the fact that visual hallucinations, when vivid, may be brilliantly coloured, says,—"Nothing could be more erroneous than to consider a man to be mentally diseased because he had mental delusions (hallucinations). The most extensive experience shows rather that such phenomena occur in the lives of very distinguished and highly intellectual men, of the most different dispositions and various casts of mind, but especially in those of warm and powerful imagination." He instances the cases of Tasso, Goethe, Sir Walter Scott, Lord Byron, Jean Paul, Benvenuto Cellini, Spinoza, Pascal, Van Helmont, and Andral, who, for the most part, had experience of seeing visions. Mr Nisbet, however, is no doubt equally ready to quote all these instances as examples of the "Insanity of Genius."[1]

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[1] *Life of Lord Jeffrey*, vol. i. p. 407.

All sane people have the power of forming internal visual images of things and words, and the faculty is probably strengthened by practice in such occupations as that of an artist; but among sane people it is only in unhealthy conditions, such as those of fatigue of the mind and prolonged sleeplessness, that these images exteriorize themselves, and give the same distinctness of impression as if real objects were being looked at.

Among the Insane, visual hallucinations are exceedingly common. They may exist alone, or be associated with hallucinations of the other senses, such as that of hearing. It is only in a few cases, however, that the hallucinations take habitually the form of printed or written words. Séglas records several of these, among others the following:—

A patient under treatment in the Bicêtre Asylum, "one day at dinner could read distinctly upon the porcelain lamp the words, 'Je t'aime,' which, according to him, had been thrown upon the lamp by the aid of a mirror. Subsequently he saw letters with his eyes more and more frequently. He said that he then accustomed himself to write with his eyes, and thus to throw words into space. The letters go out from the eye: they are yellow, have the appearance of small printed characters, then they grow in size and retreat to a certain distance, after which they diminish in size and fade away. He has, since that time, been able by this means to correspond from Bicêtre with certain persons at Clichy, and he asks them, in this way, to try to get him a patent for writing with the eyes. Let us add that this patient, who, along with these visual verbal hallucinations, has other hallucinations, auditory and above all motor (mute voices), is extremely visual. When he has taken a good look, for example, at a part of the courtyard, he shuts his eyes, and the place detaches itself very neatly *en bloc*, and then fades away as it flies towards the west. This faculty of visualization is regarded by him as a special *photographic* power, which he has at command, and which excites the jealousy of his enemies. The photographs are much more beautiful, he says, when he shuts his eyes, because the eyelid acts then as a reflector; they are then clear and lively."[2]

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[1] *The Insanity of Genius*, by J. F. Nisbet, 1891.

[2] Séglas, *op. cit.*, p. 181.

4. *The Motor Centre for Writing.*—It remains for us now only to consider the hallucinations which are, in some few cases, displayed in connexion with the motor centre for Writing. Such hallucinations are rarer than any of the three other varieties. They are rarer, because, in the first place, motor hallucinations are rarer than sensory, and, in the second place, because the motor hallucinations of writing can be expected to occur only in those who have been much in the habit of writing, and of course these are but a small minority of the general population.

It will not be necessary to explain the physiology of these graphic hallucinations, since almost everything that has been said regarding the physiology of the hallucinations connected with the motor centre for speaking applies equally to them. The writing-centre, like the centre for speaking, is a centre which, according to the most recent views, is not only motor in function, but also sensory, inasmuch as it is the centre for the psycho-motor pictures of the delicately co-ordinated movements of writing. The picture is first formed, and then it is exteriorized, by being imprinted, as it were, on the executive motor cells. Forming the picture, and yet refraining from exteriorizing it, we can write mentally, just as we can speak mentally; though, owing to the act being less habitual to us, it is not so easily accomplished. The psycho-motor picture of writing may, in certain abnormal circumstances, be so distinct that the patient has the hallucination that he is writing when he is not actually doing so. In other cases, the picture may become so very distinct and obtrusive as to compel its own exteriorization. It is then an "Impulsion" which causes the patient to take up the pen and write at the dictation of the "spirit" by which he supposes himself to be "possessed."

Séglas records cases of both these varieties. One of his examples of the psycho-motor hallucination of writing without actual impulsion is that of a female patient aged forty. She was the subject of other and more common forms of hallucination, "but on one occasion she exhibited, when under our observation, *a motor verbal hallucination of writing.* She had come as an out-patient to the Salpetrière, and while we were speaking, we noticed her carry her right hand to the region of her heart, become very red and tremble. These symptoms were the ordinary accompaniments of her hallucinations. At our request she explained to us that whilst we were speaking to her, she had had all of a sudden the idea of taking up a penholder that lay upon the desk. She had not done so, but nevertheless *she had felt as if her hand moved, and wrote the reply that she had wished to make to us.* The patient is perfectly conscious of all the varied hallucinations that she experiences, and that provoke in her incessant sufferings. She has no delusional ideas."[1]

Of several cases recorded by Séglas which exhibit the hallucination converted into an impulsion, one is that of a patient with delusions of persecution, who supposed himself to suffer, when in his bath, frightful tortures from the electrical experiments practised upon him by the spirits. He was in the habit of writing very full descriptions of these tortures. But in the midst of these descriptions, bits were interpolated in an apparently different handwriting, and these the patient declared to be the writing of the spirits, executed by means of his hand. For example, when in one passage he is enlarging upon his sufferings, the spirits suddenly interpolate the clause, "And we hope again to make experiments, and to cause thee to suffer frightfully, in contortions and contractions."[1]

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[1] Séglas, *op. cit.*, p. 247.

I have devoted some space to the consideration of these psycho-motor hallucinations, so well described by Séglas, because the subject is a comparatively new one. It is also a subject of great importance; and the conclusions arrived at are evidently in entire harmony with the latest advances in cerebral physiology. The psycho-sensory hallucinations have been long familiarly known.[2]

A very important question now being discussed by specialists is,—What is the starting point of the cerebral disturbances which produce these various hallucinations? Is it a disorder of the mind, which acts upon the speech-centres, and produces hallucinations by exciting them in the same way as they are excited by the uncontrolled imagination of a person who is dreaming; or may the disorder be primarily situated in the speech-centre itself? In the latter case, the hallucination in the speech-centre would disturb the mind; and, if the mental balance were not very good and true, it might overthrow the judgment, and be therefore the starting point of insanity. There seems no good reason for rejecting either of these suppositions. It seems quite probable that in some cases hallucinations in the speech-centres are excited by delusions in the mind, and that in others delusions in the mind are excited by hallucinations in the speech-centres. The tendency of late has been to concede to the speech-centres a position less immediately and strictly dependent upon the mind and consciousness than they were previously supposed to hold. Their powers of storing up the images of words and even of phrases, and of producing these automatically or by rote, without the active co-operation of the consciousness, have of late been brought into pretty strong relief; so that we now hear more of Reflex and Automatic Speech than we did some years ago. Reflex speech is now, indeed, attracting the attention of many students of insanity. It is so frequently exhibited by certain classes of the insane that I think it will be well to insert here a few words about it specially.

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[1] Séglas, *op. cit.*, p. 248.

[2] Psycho-motor Hallucinations and Impulsions may occur in connexion with motor centres other than those connected with Speech. It would appear that they may even prompt a lunatic to criminal violence. Dr Elkins, one of the assistant-physicians in the Royal Edinburgh Asylum, has recorded the interesting case of a young man affected with homicidal mania, who on several occasions had attempted to commit murder. "A few days after admission he volunteered the statement that his muscles were urging him to do things that he knew were wrong."—*Journal of Mental Science*, January 1891.

(*To be continued.*)

III.—CLINICAL LECTURE: ON A CASE OF COMBINED PARALYSIS OF THE NERVES OF THE ARM DUE TO INJURY.

By Alexander James, M.D., Physician to the Royal Infirmary.

S. R., aged 24, a mason, born in and at present residing in Edinburgh, was admitted to Ward 30 on 7th December 1892, complaining of weakness of the left arm, the result of a fall.

History.—Family history good. Patient has been in the habit of taking occasional drinking bouts, but is, on the whole, moderate as to alcohol. Has always had a comfortable home, and never too hard work. Had measles in childhood, and whilst in Calcutta in 1887 had a slight attack of dysentery. Has had a few falls at his work, but none of them serious until the present one. This he met with whilst working at the window of a church in Newport, Rhode Island, U.S.A., on the 27th September last. From the window he fell a height of 12 feet, landing on his left shoulder and on the left side of his head. He states that when picked up immediately after the accident he was quite unconscious; that his left arm was found to have been folded under his body,—he was lying on his back; that his left ear and cheek were cut, but that there were no other serious injuries to his head. He was at once removed to the Newport Hospital. He regained consciousness some three and a half hours after the accident, and then discovered that he had lost completely the power of motion and sensation in his left arm. Some four days afterwards he states that he noticed a gradual return of both, and he remembers that sensation returned first, and that the power of motion returned first in the fingers, and then in the hand and wrist. He states, also, that during the return of sensation his arm was so painful that he could not sleep at night, the pain being of a stinging character. He remained in the hospital for two weeks, and was treated with massage and electricity (Faradic). After leaving he attended daily as an out-patient for six or seven weeks, but finding that the improvement in the condition of his arm did not continue, he came home to Edinburgh, and was admitted, as above stated, on the 7th December last.

State on Admission.—Height, 5 ft. 6 in.; weight, 9 st. 3 lb.; well developed and fairly muscular. The left arm all over is slighter and feels more flabby than the right, and when asked to move the arm or forearm the loss of power becomes very marked. The flattening of the left shoulder caused by the wasting of the deltoid is specially apparent. There are no other obvious morbid appearances. The pulse and temperature are normal, and, with the exception of the condition of the left arm, he is a healthy, vigorous man. Let us now investigate more carefully this left arm.

Observe, in the first place, that the paralysis is associated with atrophy and absent reflex irritability of the muscles. Concerning this more will be said by-and-by, but at present this is sufficient to show that the lesion is either one of the peripheral nerves, or one of the cord involving the nuclei of origin of certain of the motor nerves in it.

Let us first consider the several muscles in detail.

Deltoid.—Its paralysis is shown by the fact that the patient cannot abduct the arm at the shoulder-joint, and its atrophy by the marked flattening of the shoulder.

Supraspinatus.—This muscle acts like the deltoid, hence when it is paralyzed along with the deltoid its loss of function cannot well be demonstrated by a corresponding loss of movement. In this patient, however, its involvement is well seen by the wasting which it shows. It is worth mention that Gowers states that when the supraspinatus is paralyzed along with the deltoid, the head of the humerus falls away from the acromion far more than when the deltoid is paralyzed alone. This is illustrated in this patient to some extent. The head of his left humerus is distinctly lower than that of the right.

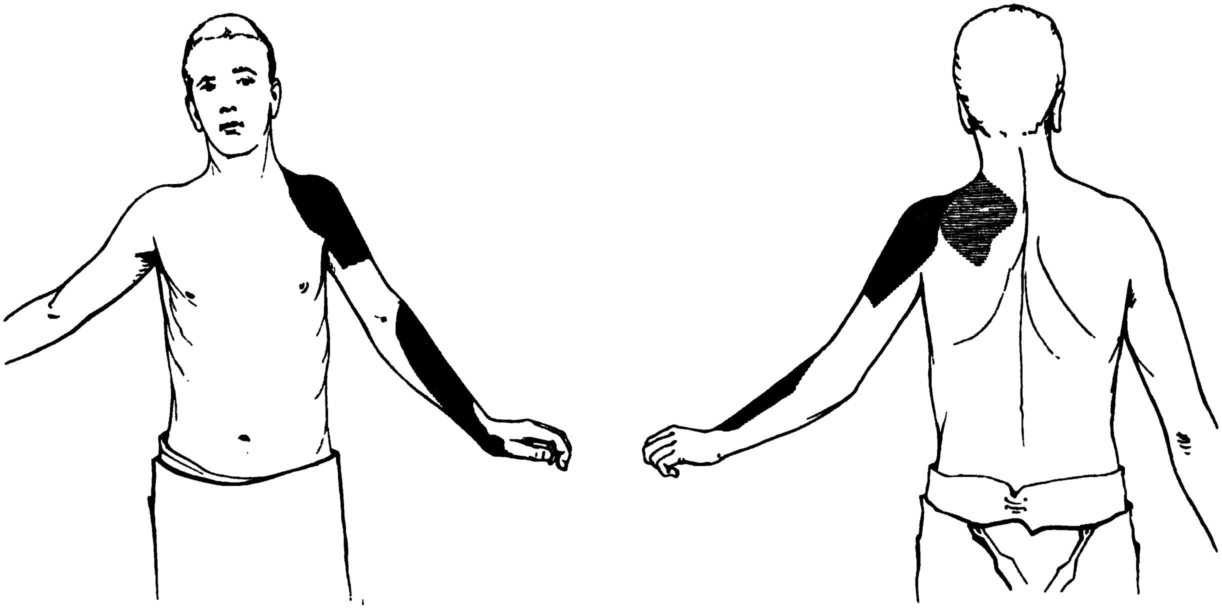
Infraspinatus.—This rotates the humerus outwards, a movement which this patient cannot perform, but the condition of this muscle is also best shown by the atrophy.

Teres Minor.—This has a similar action to the infraspinatus, and is probably also involved in this case, although this cannot be demonstrated.

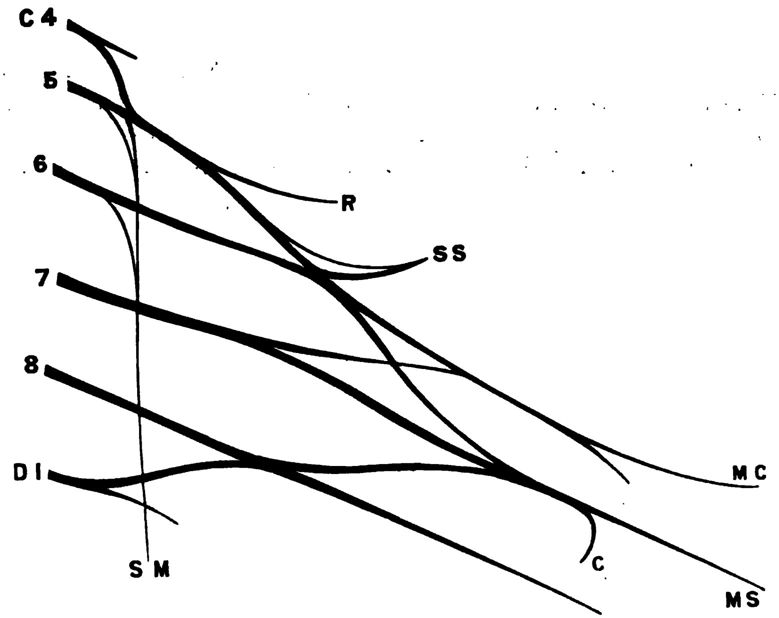
Subscapularis.—This rotates the humerus inwards, and is apparently *not* involved in this case. As you see, the patient, when asked, can rotate his humerus inwards, and you see also that the pectoralis major, trapezius, and latissimus dorsi are evidently unaffected.

The *rhomboids* are involved, as shown when the patient draws back his shoulders. The flattening in the left interscapular region is then well marked.

The *serratus magnus* is also involved. In this case its paralysis can best be seen when the patient tries, as it were, to push himself backwards with his hands. On the right side the digitations of the muscle can then be seen to stand out powerfully as compared with those of the left.



Case of Combined Paralysis of the Nerves of the Arm.—The darkly shaded areas correspond with the parts supplied by the circumflex and musculo-cutaneous nerves, and are quite anæsthetic. The lightly shaded area corresponds to a part supplied by the cervical plexus, and here anæsthesia is not complete.



Scheme of the Brachial Plexus.—S M, nerve to the serratus magnus ; R, to the rhomboids ; S S, to the supra- and infraspinatus ; M C, musculo-cutaneous nerve, with fibres to the biceps and brachialis anticus ; C, the circumflex nerve ; M S, the musculo-spinal nerve, with fibres to the supinator longus, etc.

The *teres major* draws the humerus to the scapula, aiding the pectoral muscles. It is probably not affected in this case.

Triceps is not affected, as shown by its well-nourished condition and by its extensive power. When I flex his left arm and ask him to extend it, he does so with considerable force.

Biceps is markedly involved. He cannot flex the elbow, nor can he supinate the forearm when pronated.

Brachialis anticus is probably also involved, though this cannot well be demonstrated.

Supinator longus is certainly involved. This is well seen when he attempts to flex the elbow or to supinate the hand when it has been pronated.

The pronators and the extensors and flexors of the wrist and fingers seem all to work well. We were for a time not quite sure of the extensor carpi radialis longior, but we have now concluded that it is acting normally.

Next notice that these affected muscles show the reaction of degeneration. With the faradic current to their motor points we find no reaction on the affected side, whilst on the healthy they respond readily. The unaffected muscles of the left arm also respond readily to the faradic current. On the other hand, with the galvanic current to the affected muscles they respond quite readily, and the so-called "qualitative" or "polar" change is marked. That is to say, while

$$\mathrm{KClC} \qquad \begin{matrix}\mathrm{AClC}\\ \mathrm{AOC}\end{matrix} \qquad \mathrm{KOC}$$

is the order on the healthy side, we found that on the affected side there occurred in at any rate some of the muscles,

$$\mathrm{AClC} \qquad \mathrm{KClC}.$$

But this patient also presents some important sensory disturbances. There is, first of all, a well-marked area of anæsthesia over the deltoid muscle, corresponding with the distribution of the sensory fibres of the nerve to that muscle, viz., the circumflex nerve. Higher up on the shoulder, and over the supraspinatus muscle, is an area where anæsthesia is present, but to a less degree. Lastly, over the forearm there is an area of anæsthesia corresponding to the distribution of the subcutaneous fibres of the musculo-cutaneous nerve.

These anæsthetic areas can be shown very well by touching the skin over them, and noting where the sensibility becomes normal. They are well shown in the Illustrations, which are taken from photographs. Thermal sensibility is also affected, as you see the hot and cold test-tubes applied to these areas cannot be distinguished.

Further, with the faradic current we find that whilst over the normal side the stimulus is felt when the approximation of the secondary to the primary coil reaches 15 mm., over the anæsthetic areas the stimulus is not felt till the approximation reaches 10 or 11 mm. With this diminution of sensibility to touch, temperature, and the faradic current, we find, further, a marked hypersensibility to painful impressions. Thus a pinch or a tap which, over the anæsthetic areas of his left arm and shoulder, causes the most apparent wincing, on his normal side has no effect whatever. There is anæsthesia with hyperalgesia.

In connexion with these areas of diminished sensibility, we also endeavoured to discover if, with the galvanic current, an altered polar reaction occurs similar to what occurs in muscles when degenerated. In some such cases we know that a sensation is produced by ACl current more readily than by KCl current. In this patient we have found some evidence of this change,—only, however, over the deltoid area of the affected side.

Here, then, we have a case where, as the result of a fall on the shoulder some three months ago, we have paralysis of the following muscles:—Rhomboids, supra- and infraspinatus, probably teres minor, serratus magnus, deltoid, biceps, and probably brachialis anticus, supinator longus.

In addition, we have areas of anæsthesia over the shoulder, due to involvement of the sensory fibres of the circumflex, and over the radial surface of the forearm, due to the involvement of the sensory fibres of the musculo-cutaneous nerve. The area of impaired sensibility over the suprascapular region is probably due to involvement of some of the sensory branches of the cervical plexus.

Thus, then, we have a lesion involving the nerve to the serratus, the nerve to the rhomboids, the suprascapular nerve, the circumflex, and certain of the fibres of the musculo-cutaneous nerve, viz., those to the biceps, brachialis anticus, and supinator longus and its sensory fibres. Noting that thus certain nerves and certain fibres are, as it were, picked out, we have to endeavour to find a locality where a lesion could possibly produce these effects.

In connexion with this, let me first draw your attention to the experiments of Ferrier and Yeo and the relations of various movements of the arm to the spinal nerve-roots. For example, on stimulating the 4th cervical root in the monkey, they found that the movements were elevation and retraction of the arm, flexion and supination of the forearm by the rhomboids, supra- and infraspinatus, biceps, brachialis, and supinators.

On stimulating the 5th cervical root the movements were "similar to the last, but without retraction of the arm, and with extension of the wrist and first phalanges, by the deltoid, serratus, flexors of elbow, extensors of wrist, and long extensors of fingers." That is to say, that, with the exception of the extensors of the wrist and fingers, stimulation of the 4th and 5th cervical roots causes contraction of all the muscles which are picked out by the paralysis in this case.

Again, Gowers, in treating of the combined paralysis of the nerves of the arm, refers to the fact pointed out by Erb, that injuries to the neck sometimes cause a combined paralysis of the deltoid, supra- and infraspinatus, biceps, brachialis anticus, and supinators. On this subject Gowers goes on to say,—" Erb found that there is one spot between the scaleni, corresponding to the 6th cervical nerve, at which electrical stimulation puts all those muscles in motion."

Hœdemaker, who has described two cases of this palsy, finds the motor point in a line drawn from the sterno-clavicular articulation to the 7th cervical spine, 1·5 cm. from the edge of the trapezius. The palsy is apparently dependent on disease of the 5th and 6th cervical nerves, and the 5th, it will be remembered, receives a twig from the 4th.

In our patient there is, as we have seen, involvement of certain sensory as well as motor fibres, and as the former of them, viz., those of the circumflex and of the musculo-cutaneous nerves, seem to have been traced to the 4th and 5th cervical spinal nerve-roots, I am inclined to think that these are the nerve-roots involved. From the fact that there is some appearance of change in the order of reaction of the sensory nerves to the galvanic current, it may, I think, be supposed that the spinal nerves have been injured outside the junction of the motor and sensory roots, and, of course, outside the ganglion on the sensory ones.

As regards prognosis this is so far favourable. The nerve affection has been due to injury. It has not yet lasted too long to preclude recovery. The muscles have not lost their irritability to galvanism, some return of power has been noticed in the supination and flexion, and the supinator longus and biceps now show some tendency to respond to the faradic current. Further, the sensibility is improving.

Treatment.—This consists mainly in galvanism to the muscles and faradism to the affected areas of skin. Recently the faradic current has been also applied to the supinator longus and biceps. Massage to the affected limb is being applied daily. He is getting strychnia internally, and we shall use strychnia hypodermically if we think it necessary. To prevent stiffening at the shoulder he daily gives a little exercise to the joint by holding on by his hands to a horizontal bar which we have fixed up for him in the ward. Possessing good power in his fingers and hands, he can hold on quite easily, and the result has been that after about a week a threatened stiffening of the shoulder has disappeared.

IV.—TWO RARE CASES OF SUDDEN DEATH IN MEDICO-LEGAL PRACTICE.

By Charles Templeman, M.D., B.Sc., Surgeon of Police, and Surgeon to Royal Infirmary, Dundee; Lecturer on Clinical Surgery, St Andrews University (University College, Dundee).

(*Read before the Medico-Chirurgical Society of Edinburgh on 7th December* 1892.)

The two cases which I wish to bring under the notice of the Society to-night are exceedingly interesting, both from a medical and a medico-legal point of view, on account of their rarity; and as a careful post-mortem examination was made in both instances, the cases are complete, and are, I think, worth recording. They were both investigated by the Procurator-Fiscal, and came under my notice in this connexion.

The first case I regard as one of emotional inhibition of the heart.

One morning, in March 1888, I was asked by the Procurator-Fiscal to examine the body of a man who had died under somewhat suspicious circumstances. The history of the deceased, which I elicited from his wife, as far as it has any bearing on the case, was as follows:—J. M., a stone-mason to trade, was 43 years of age, and had always been healthy, or at all events had enjoyed sufficiently good health to permit of him attending to his work. He was of a very nervous temperament, passionate, and easily excited. On several occasions, while labouring under some unusual excitement, he had complained of "something coming over his heart," and had remarked that he feared "it would carry him off some day."

On one occasion, when in a great passion, he had fallen down in a faint, but had gradually come round again under treatment. He had, however, never suffered from dyspnœa, œdema of the feet, or any of the other usual symptoms of a heart affection.

The circumstances attending his death were as follows:—On the evening in question he returned from his work at five o'clock, and after dressing and taking his tea, he went to the house of a friend to spend the evening over a game at draughts. While there he remarked that he was suffering from a slight cold, but otherwise he was in his usual health. He returned home about ten o'clock, had some supper, and then sat down at the fireside to read the evening paper. At eleven o'clock his wife and he went to bed in the kitchen. The house consisted of two rooms connected by a short lobby into which the outer door opened. For some time previous to this, he had been much annoyed by one of his sons, a young lad of 20, who had been in the habit of staying out late at night, and of coming home under the influence of liquor. On this particular night he returned about half-past eleven, and his mother got out of bed to open the door for him. His father was very angry, and called out to his wife not to allow him to get in. She, however, opened the door and let him in, and accompanied him to the bedroom. Thereupon his father rose from his bed and followed them. He was greatly excited and passionate, and on reaching the bedroom tried to get at his son to strike him, but his wife came between them and prevented him from doing so. There were no blows struck on either side. Deceased remained in the room for a few minutes scolding his son, but was persuaded by his wife to return to bed. She remained in the bedroom for about ten minutes, and on returning to the kitchen, was horrified to find her husband lying over the front of the bed dead.

In making the post-mortem examination I was associated with Dr J. Mackie Whyte, Pathologist to the Dundee Royal Infirmary.

The body was examined sixteen hours after death. It was that of a fairly well-nourished man, 5 feet 5 inches in height. Rigor mortis was well marked, and post-mortem lividity was also well marked on the posterior aspect of the body.

On opening the chest, the heart was found arrested in diastole, but the muscular substance was firm, apparently from rigor mortis. Both sides of the heart—more especially the right—contained a quantity of blood in a fluid condition. The valves were all normal, and the coronary arteries free from disease. The muscular substance of the heart was to all appearance perfectly healthy, presenting no sign of fatty degeneration, but I regret we made no microscopic examination of it.

A most careful examination of the whole of the body failed to discover any pathological lesion to account for death.

In formulating an opinion as to the immediate cause of death in this case, the points which deserve attention are—(1.) The previous history of the deceased. This shows that he was a man of a highly neurotic temperament. The attack of syncope which his wife speaks to as having been brought on by excessive emotion, and the fact that he himself had on several similar occasions complained of "something having come over his heart," show that under circumstances somewhat similar to those attending his death he had suffered from cardiac inhibition of a temporary, but more or less severe character; (2.) his condition of great excitement and passion when last seen alive; and (3.) the arrest of the heart in diastole, the fluid condition of the blood which it contained, and the entire absence of any pathological condition in any part of the body which would account for death. These all point to the conclusion that in this case death resulted from emotional inhibition of the heart.

This mode of death is one which is perfectly well recognised in medical literature, but its occurrence in one whose heart bore absolutely no appearance of any structural lesion is certainly very rare, and presupposes on the one hand such a high degree of sensitiveness to nerve impressions, and on the other such intense emotion, that its occurrence seems in the highest degree improbable.

In this case we have both these factors, more especially the former, present in a marked degree, and the fatal attack seems to have been only an exaggeration of what he had previously experienced under similar circumstances.

Dr George W. Balfour, in his well-known work on *Diseases of the Heart*, cites several instances of death from this cause, but in none of them is there any record of the condition of the heart on post-mortem examination. Speaking of irregularity and intermission of the pulse of a purely nervous origin, as that induced by sudden fright, grief, or anxiety, he goes on to say (page 260), "Emotional inhibition of the heart is often a much more serious matter, and may fatally arrest its action; this probably never occurs in those whose hearts are structurally sound, but it has happened often enough in those who were not known to labour under cardiac disease to make it a possible occurrence to any one past middle life, and to some even at an earlier period."

Physiologists have shown that stimulation of the vagus through its inhibitory fibres arrests the heart in diastole with all its parts in a flaccid condition; but if absolutely healthy, although the stimulus be continued till the nerve becomes exhausted, and more readily if the stimulus be arrested, the heart begins to beat as before.

In view of this, the exact rationale of this death is somewhat difficult to explain.

In an article on "Cardiac Failure and Sudden Death," which appeared in the *British Medical Journal* on 5th January 1889, Prof. M'William of Aberdeen gives an account of the results of an investigation he had made on the mammalian heart, and from a long series of experiments he concludes that sudden cardiac failure, instead of taking the form of a sudden ventricular standstill, generally assumes the form of a "violent, though irregular and inco-ordinated, manifestion of ventricular energy."

He suggests that such a case as I have described may be explained on the supposition that the inhibited heart is put beyond the chance of recovery by the lapse of the ventricles into delirium. He says, "It is probable that fatal syncope often differs from non-fatal syncope in the supervention in the former case of fibrillar contraction (or delirium) in the ventricular muscle; this seals the fate of the depressed heart by arresting the circulation, and by causing a rapid exhaustion of the ventricular energy in consequence of the violent and continued excitement of the contractile tissues."

The explanation which more naturally suggests itself is, that as deceased was labouring under a great excitement, which would produce increased rapidity of the circulation and hurried breathing, so much blood was sucked into the right side of the heart from the large veins, that the chambers became over-distended, producing syncope from the inability of the cardiac walls to contract owing to the excessive strain thrown upon them. The erect position of the body would of course predispose to this, and the position in which the body was found—lying face downwards over the front of the bed—shows that in all likelihood death had taken place while deceased was in the act of getting into bed.

Whether either of these explanations be the true one, or whether both may have come into play, is of course more or less a matter of speculation.

The other case to which I would call your attention is one of death from shock following a blow on the epigastrium. About ten o'clock on the morning of the 26th of July 1890, I was called by the police to a house in Dundee to see the body of a woman who had died suddenly.

The circumstances attending her death were as follows:—Deceased, Mrs C., and her husband occupied a single-roomed house in a small tenement. On the preceding evening they had both been present at the wedding of a relative, and returned home about five o'clock in the morning. The husband at this time was a good deal the worse of liquor, but deceased was apparently quite sober, having partaken of very little during the marriage festivities. Soon after they reached home they commenced to quarrel, and the noise they made awakened some of their neighbours. One woman, whose house was on the other side of the passage, got out of bed and went to her door to see what it was all about. She heard the man swearing at his wife and threaten her life, and shortly afterwards saw him push her out of the house. While deceased was trying to force her way back, her husband struck her a severe blow on the pit of the stomach. By this she was immediately stunned, and staggered across the passage into this neighbour's house, doubled up, and with her hands pressing on the pit of the stomach. She gasped out, "Oh, I'm dying," and afterwards vomited a little. Immediately thereafter she sank down on the floor, turned on her side, sighed three times, and then became quiet.

Thinking she had fallen asleep, the woman in whose house she was lying placed a pillow below her head, and allowed her to lie still. Shortly before six o'clock, when this woman was leaving for her work, deceased was still quiet, and being unwilling to disturb her, she locked her door and gave the key to another of the neighbours, asking her to open the door if she heard the woman stirring.

On returning to breakfast, shortly after nine o'clock, she found

Mrs C. lying dead in exactly the same position in which she had left her.

When I arrived at the house a few minutes after ten o'clock, I found deceased lying on the floor on her left side, with both knees drawn up, her head resting on a pillow, her left arm by her side, and her right arm thrown across the epigastrium. The body was quite cold and stiff, showing that death had taken place a few hours previously, no doubt at the time when she sank down on the floor and sighed. Three or four minutes elapsed between the time the blow was struck and the time death occurred, and the spot on which she died was about five yards from her own door, where she received the blow.

I was ordered by the Procurator-Fiscal to make a post-mortem examination of the body, and did so the same evening along with Dr A. M. Stalker, physician to the Dundee Royal Infirmary. The body was examined fifteen hours after death. It was that of a well-nourished woman, 4 ft. 10½ inches in height, and apparently about fifty years of age.

Rigor mortis was beginning to pass off the upper parts of the body, but was well marked in the lower extremities. Post-mortem lividity was well marked over the back of the trunk and also on the left side of the face and body. There was a small bruise on the front of the left shoulder, another on the back of the left arm in its lower third, and one over the eleventh rib, a little in front of its angle. These were all of recent origin, but there were no other marks of bruising on any part of the body.

The abdomen was examined first. There was no ecchymosis of the superficial parts, or of the muscles of the abdominal wall in the epigastric region. With the exception of marked congestion of the liver, spleen, and mesentery, there was nothing abnormal detected. There was no sign of bruising or rupture of any of the viscera.

The heart was apparently normal, but no microscopic examination of its walls was made. There was a small quantity of blood in the right side, but the left was completely empty.

The lungs were normal.

There was slight congestion of the cerebral veins, but otherwise the brain was quite normal. There was nothing abnormal in any of the other organs of the body. From the negative result of the examination, and from the circumstances attending her death, we concluded that the immediate cause of death had been syncope, produced by the shock following the blow on the epigastrium. That death can be caused in this manner without any visible injury either to the abdominal parietes or the viscera is, I think, admitted by most surgeons and medical jurists, although the number of such cases recorded is very limited.

Mr Pollock, in his article on "Injuries of the Abdomen" in Holmes's *System of Surgery* (vol. iii. p. 864), criticises the few cases of this nature which are recorded, and seems to doubt the possibility of a fatal issue resulting without some grave internal injury to account for it.

The first case he mentions is one recorded by Mr Wood of Bury, and reported in the *Medical Gazette* (vol. xliv. p. 213). Two men had been engaged in a stand-up fight, and one of the combatants died very suddenly after receiving a blow on the epigastrium. No pathological lesion to account for death was discovered on post-*mortem* examination, although the number of bruises on different parts of the body shows that he had been rather severely punished.

The other cases are cited by Mr Poland in his prize essay on "Wounds and Injuries of the Abdomen." One of these is the well-known case recorded by Sir Astley Cooper, of the man who was engaged at the London docks wheeling a heavy load, when one of his companions, giving him a slight blow on the epigastrium, said, "Stand aside and let a better man take it." He immediately dropped down dead, and on post-mortem examination nothing could be found to account for death; but it is right to add that the record of the post-mortem is not complete, and therefore not altogether satisfactory.

Another case was the subject of a trial at the Central Criminal Court in August 1841, when death took place during a pugilistic encounter. The details in this case are not satisfactory.

In 1835 a man was tried at Cambridge for killing his wife by beating her on the abdomen with a cod fish. She died shortly after. A large number of bruises was discovered on the body, and deceased was in the last month of pregnancy, but there was no appearance of injury to any of the viscera. In this case, however, it is open to question whether death should not be attributed to shock resulting from multiple injuries, rather than that produced by a single blow on the epigastrium.

Apart from these, however, Mr Pollock records a case what I think affords an example of this rare class of injuries. It was reported to him by Surgeon Arthur Harding, A.M.D. An officer's servant was kicked by a pony in the region of the liver. He at once said to a companion, "I'm done for," and then fell down apparently dead. Dr Harding saw him within five minutes, and found life extinct. In this case there was a faint discoloration like a bruise at the seat of injury, but excepting very marked congestion of the kidneys, spleen, and liver, there was nothing abnormal detected to account for death.

Dr Taylor, in his work on *Medical Jurisprudence*, records one or two cases. In one case a man was tried at Norwich in 1831, and convicted of manslaughter by striking the deceased several blows on the breast and one on the pit of the stomach, as a result of which he fell down dead instantly; and Beck records a similar case in which a man walking in Fleet Street was struck by a woman in the region of the stomach, which caused almost instantaneous death. In neither of these cases did a post-mortem examination reveal any injury which would account for the fatal result.

Still, taken altogether, the number of authentic cases of this nature in which a careful and complete post-mortem has been made is so small, that the record of my case will assist in corroborating the opinion held by most authorities as to the possibility of a fatal issue resulting in this way from an apparently trifling blow. In this case one intelligent witness gave a very clear account of the sequence of events from the time the woman was struck till her death, which you will note did not follow immediately on receipt of the injury, as in some of the cases I have mentioned, but from three to four minutes afterwards. This removes it from the category of cases of sudden arrest of the heart's action by an inhibitory impulse transmitted along the vagus.

Sir William MacCormac, in his article on "Shock" in Quain's *Dictionary of Medicine,* says that the severe shock caused in man by a blow on the epigastrium owes its origin to an induced paralytic dilatation of the visceral arteries. "For the present," he says, "we may thus accept, as the most plausible interpretation of the symptoms of shock, a sudden dilation of the abdominal vessels attributable to an inhibitory influence exerted upon the splanchnics through the medium of a special reflex centre which is in more or less direct communication with the sensorium, and with all parts of the body."

The appearances presented by the body in this case—the well-marked engorgement of the liver, spleen, and mesentery—are quite in accordance with this view, and as physiologists tell us that the dilatation of vessels produced in this manner is not instantaneous but gradual, the lowering of the blood-pressure which results is also a gradual one, and this affords an explanation of the fact that death did not ensue till three or four minutes after the injury had been inflicted. The fatal syncope was no doubt brought about by this lowering of the general blood-pressure by the somewhat sudden withdrawal of such a large quantity of blood from the general circulation into the vessels of the abdominal viscera, more or less emptying the heart, and inducing a condition of sudden anæmia of the central nervous system.

To the medical jurist, these two cases present features of special interest. In the first case no criminal proceedings took place, as it was evident that the death could not in any way be attributed to external violence. Moreover, all the witnesses of the quarrel between father and son spoke positively to the fact that no blows were struck. Had, however, there been any evidence forthcoming of a blow on the epigastrium having been inflicted, I have no doubt the son would have been indicted on a charge of culpable homicide. In such a case the cardiac paralysis would in all probability have been regarded as produced by an inhibitory impulse transmitted from the solar plexus, the result of the blow, and with an apparently normal heart, any explanation of its being due to excessive emotion would in all likelihood have been looked upon as improbable.

In those cases recorded in which death followed immediately upon a blow on the epigastrium I can find no record of the state of the heart, as to whether it was arrested in systole or diastole, and with the exception of the case recorded by Surgeon Harding, there is nothing to indicate whether the mode of death was similar to that described in my first or second case.

In Surgeon Harding's case the intense congestion of the abdominal viscera would show that the fatal syncope had been brought about through the medium of the splanchnics.

My second case afforded an illustration of what every one who has much experience in legal medicine must have observed, viz., the extreme reluctance of a jury to believe that an injury which does not leave severe and unequivocal traces both on the external and internal parts can possibly prove fatal.

In this case the husband was tried by a sheriff and jury on a charge of culpable homicide, and although the evidence was distinct and clear, the jury returned a verdict of assault to the serious injury of the person,—a most absurd verdict, as it was evident that if any assault had been committed it must have led to the woman's death; and on the other hand, if the blow had not been the immediate cause of death, any assault which had taken place must have been very trifling. The prisoner was sentenced to three months' imprisonment.

V.—TUMOURS OF THE BLADDER.

By David Wallace, F.R.C.S. Ed.

(*Read before the Edinburgh Medico-Chirurgical Society, 7th December* 1892).

"It is a fact, which now begins to appear somewhat surprising, that, until a very recent period, the subject of tumours of the bladder has received a comparatively small share of attention, either from pathologists or from practical surgeons. The former have noticed these morbid products chiefly to remark on their rarity; the latter have alluded to them chiefly as for the most part beyond the power of art to remove. Yet there is little doubt that these growths are by no means uncommon, and recent experience is teaching us that surgical treatment may often greatly palliate, and sometimes successfully extirpate the disease. It must be admitted that these cases are almost invariably somewhat difficult to identify, especially in an early stage."

These sentences were written in 1884 by Sir Henry Thompson, the surgeon in Great Britain who probably has had the greatest experience of bladder surgery in all its varied forms. A year or two previously, in 1880, he had introduced his method of perineal cystotomy (boutonnière périnéale) for diagnostic purposes, a method previously advocated by Volkmann. In 1884, in the treatise *Tumours of the Bladder*, Sir H. Thompson gave a table comprising twenty cases of tumour in which he had recourse to operative procedure, and we may take it that this number formed at that period perhaps the largest number which had come clinically under the notice of one observer. Individual cases of successful operative treatment had been previously published, *e.g.*, by Billroth, Kocher, Volkmann, Guyon, Humphry, Berkeley Hill, etc. (but in 1874 only eight cases had been reported). Since 1884 various monographs have been written, more particularly in France and Germany, and the number of cases quoted by individual authors is greatly in excess of those reported by Sir Henry Thompson. Thus Nitze, Albarran, and Fenwick have all reported larger series. Sir Henry Thompson has, however, brought an additional list of twenty-one cases under our notice in a paper contributed to the *Lancet* in 1890.

Without going further into the history of the subject, I may say that prior to 1880 very few cases of tumour of the bladder were treated surgically (*vide* Stein in *A Study of the Tumours of the Bladder*, 1881). About that period clinicians recognised that vesical neoplasms give rise to a series of symptoms which is more or less diagnostic of their presence (Guyon, *Leçons sur les maladies de la Vessie et de la Prostate*, p. 192). Sir Henry Thompson in 1880 for the first time removed a tumour by operation; shortly afterwards he proposed the "boutonnière" operation, and in 1884 he published his first series of cases. Between 1880 and 1884 individual surgeons reported groups of two or three cases operated upon by them, but vesical neoplasms were still regarded as comparatively rare, diagnosis difficult, and treatment unsatisfactory. Since 1888 a marked change has taken place, and tumours of the bladder are recognised to be of not infrequent occurrence. To what do we owe this change in our knowledge? I believe it is due—

1*st*, To more careful observation and fuller appreciation of the symptoms produced by their presence; and,

2*nd*, To the introduction of the perfected cystoscope, with light internal, and I agree, therefore, with a provisional division of the history of tumours of the bladder into two epochs, as suggested by M. Albarran in his recent most valuable book *Tumeurs de la Vessie*,[1] —the period prior to 1888, and the period subsequent to that date. I think the various points to which I have alluded bear this out.

I propose to bring before you to-night various considerations regarding the clinical history, prognosis, and treatment of tumours as observed by myself, and to illustrate the subject I have brought several macroscopic and microscopic specimens to the meeting. For most of these I am indebted to Prof. Chiene. The sections have been made in the Surgical Laboratory of the University by Mr Stiles.

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[1] Albarran, *Les Tumeurs de la Vessie*, 1892.

During the last three years I have had under my observation twenty-three cases of tumour of the bladder, exclusive of cases not examined cystoscopically. In twenty-one of these twenty-three cases the patients were operated upon, and the previous diagnosis verified. In one a portion of tumour was passed *per urethram* subsequent to the cystoscopic examination, and examined microscopically. Of the twenty-three cases, a portion of the tumour removed was examined microscopically in thirteen instances. Following the classification of tumours of the bladder as given by M. Albarran,[1] those examined microscopically were as follows:—Papillomata, 4; Epitheliomata, 7; Fibro-myoma, 1. The portion of tumour passed *per urethram*, to which I have referred, was so macerated by the urine, in which it had evidently lain for some time, that no definite conclusion could be come to regarding the question of malignancy. If the clinical history, condition at the time of operation, and microscopic appearances be considered as guides sufficient for classification in all the twenty-three cases, then the tumours would group as follows:—Fibro-myoma, 1; Papillomata, 8; Epitheliomata, 14.

With these prefatory remarks allow me to shortly detail three cases of tumour of the bladder before I pass to a general consideration of symptomatology, etc.

CASE I.—W. D., æt. 28, a clerk, gave the following history:—Present illness began in November 1889, when he passed for the first time some blood in the urine. He had no pain nor discomfort. He has continued to pass blood since that date,—that is, for three months,—more or less intimately mixed with the urine, but sometimes in the form of clots. During that time he has been more or less confined to bed, and regularly has taken turpentine internally, but has observed no diminution in the amount or change in the character of the blood. During the last month he has suffered pain at the point of the penis, more especially at the end of micturition. He has at present pain over the suprapubic region, but none perineally. He never passed gravel. There is nothing felt per rectum, and the prostate seems normal. The urine contains blood, but no special cells.

On Sounding.—A roughness was felt on the inferior aspect of the bladder, but no stone was detected.

Cystoscopic Examination.—On anterior aspect of the bladder, in the middle line, a rounded smooth swelling is seen, about the size of a walnut, which projects into the bladder, but is sessile.

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[1] *Op. cit.*

Operation.—Suprapubic cystotomy. From position indicated above, a firm tumour, about the size and shape of a large walnut, was removed. The surface was irregular and lobulated. It consisted of two main lobes, each with secondary lobules, and was nowhere covered by epithelium. At one end the tumour was covered with a slight phosphatic deposit.

Microscopically.—A fibro-myoma.

CASE II.—M. W., æt. 49. Nine months ago patient suddenly, without any apparent cause, when in the best of health passed blood *per urethram.* He had no pain, frequency of micturition, nor other symptom beyond the hæmaturia of genito-urinary trouble. There were no clots, and the urine was dark-brown in colour. From time to time, at intervals of about a month, he had similar attacks of hæmaturia, but was in no way otherwise affected. Eight months after the first attack he passed for the first time red blood and clots. The bleeding lasted three days. About this time some pus was also passed in the urine, but no special cells were at any time observed on microscopic examination.

Cystoscopic Examination.—An irregularly lobulated swelling, ulcerated on its surface, was detected, situated above the right ureteral opening.

Operation.—Suprapubic cystotomy. Tumour as described removed by scissors and Volkmann's spoon.

Microscopical Examination.— An epithelioma infiltrating the muscular coat of the bladder.

CASE III.—M. F., æt. 55. For three years had recurrent attacks of hæmaturia, ushered in, as a rule, by headache and sense of chilliness. Bleeding came on suddenly without any known cause, lasted for three days, and then, without any treatment, ceased. There were no clots, and the blood was intimately mixed with the urine. Later clots were passed. There was no other symptom of genito-urinary affection, no pain, no frequency of micturition, and no cells were discoverable in the urine. He was a perfectly healthy man so far as he was aware, and only sought advice after several attacks, as he was alarmed at their recurrence. For one year after the first hæmorrhage he had complete immunity from bleeding; then he had a second attack, followed in six months by a third, and then at intervals of two or three months he had others.

Cystoscopic Examination.—A tumour about the size of a filbert, tuberculated on its surface and pedunculated, was observed attached to the left side of the bladder above the left ureteral opening.

Operation.—Suprapubic cystotomy. Tumour found as described, twisted off, and then the base clipped away with scissors.

Microscopically.—A typical villous papilloma.

In these three cases months elapsed before, judging from the usual data, even a provisional diagnosis of tumour could be arrived at. On the other hand, cystoscopic examination in each case proved indubitably the cause of the hæmaturia to be a vesical neoplasm. I shall now pass to the consideration of the symptomatology of vesical tumours.

The symptoms of the presence of a vesical tumour depend on the stage in the disease at which the patient comes before us. Thus we may have a patient who gives a history in the later stages of both functional and mechanical trouble, *e.g.*, hæmorrhage, pain, frequency, retention, etc.; while if we see the patient in an early stage, only one symptom may have manifested itself. It will be noted that in each of the cases I have quoted, the first, and for a time the only symptom was *hæmorrhage*, and this is, I believe, the first evidence of a tumour in almost every instance, and in my opinion may be considered the cardinal symptom pointing to the presence of a tumour. In vascular tumours, such as papillomata, bleeding at an early period is not to be wondered at; but even in less vascular tumours, such as sarcomata, it is, in the majority of cases, the initial symptom. Barling (*Illustrated Medical News*, 1888) states that out of 22 cases of sarcoma it was present in 13, and was the first symptom in 11. Albarran found it to be the first symptom in 18 sarcomata out of 29. Hæmorrhage was present in all of the 23 cases I examined, and Albarran states that it was present in 148 out of 200 cases.

Tumour cells are, in my experience, very rarely found in the urine, even with repeated careful examination of the deposit. In only 4 cases out of the 23 have I been able to detect any cells or portions of tumour in the urine. In two of these the portions of tumour were got after washing out the bladder as a preliminary to cystoscopic examination. In most of the cases very careful endeavours were made to find cells or other evidence of the presence of a tumour in the urine. Sir Henry Thompson,[1] although he lays great stress on the presence of tumour cells or portions of tumour as a means of diagnosis, advocates that an endeavour should be made, by *forcible* washing out of the bladder, to detach some cells or a portion of the tumour. But this procedure may fail to have the desired effect, and in its performance the surgeon certainly runs the risk of giving rise to very free hæmorrhage. This is obviously the case, as hæmorrhage in the fimbriated tumours is sometimes due to the detachment of a portion of a villus. Thus in the patient[2] from whom this tumour was removed there would be most profuse hæmorrhage, and if the urine was collected and strained a portion of tumour was sometimes got, until the patient himself recognised that severe hæmorrhage—and in his case it was most severe—was usually followed by the passage of a portion of tumour.

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[1] *Op. cit.*

[2] *Vide* footnote on page 733.

I think, however, there is a further objection to trusting to the passage of portions of tumour, viz., that they are sometimes retained in the bladder for a time after separation from the tumour mass, and become macerated, so that from examination no definite conclusion can be arrived at regarding the character of the portion examined.[1] This objection does not apply to portions broken off and washed out by the surgeon, but in many cases even forcible washing out may fail to detach either a portion of the tumour or cells from its surface. Thus in Case I.—the fibro-myoma—we had to deal with a tumour which had a firm, smooth surface, while in Case II. the surface, though irregular, was firm and not easily broken down. But suppose cells are found, it is not easy to discriminate between cells from the normal bladder and solitary epithelial cells from a tumour.

The first symptom, then, of the presence of a tumour in the bladder is, I believe, in the majority of cases hæmorrhage unaccompanied by any other sign, there being no cystitis, a complete absence of pain, and no frequency of micturition, although in some instances we may meet with these symptoms as well as hæmorrhage, even in early stages of the disease. We are driven back, therefore, to hæmorrhage as the possibly pathognomonic sign. What are its characters? They are in most cases—

1*st*, *Sudden onset* and *sudden disappearance* without any previous warning or cause.

2*nd*, *Intermittence*, sometimes of months, sometimes of weeks.

3*rd*, *Appearance of the blood.* Red blood with clots which are irregular in shape, the blood being passed chiefly at the end of micturition. The presence of clots, the red colour of the blood, and its passage chiefly towards the end of micturition, are not necessarily present. Thus in Case II. for eight months there were no clots, and the blood was dark brown in colour, intimately mixed with the urine, and not greatest at the end of the act of micturition.

4*th*, The total want of benefit from the ordinary hæmostatics. To exemplify some of these characteristics let me quote a case.

In October 1887, four years and nine months before I saw the patient H. A., he suddenly, without any cause, passed red blood without clots and intimately mixed with the urine. The urine was mixed with blood each time he micturated for one day, and then suddenly the blood disappeared. The blood did not come specially at the end of micturition, and he had no pain. For one year and eight months he had no recurrence of the bleeding, but again suddenly, when he was in the best of health, it appeared, and, just as before, he suffered from no other symptoms. The blood was again intimately mixed with the urine, not specially at the end of the act of micturition, and there were no clots. This time, however, the bleeding persisted for one year, the urine never being completely free from blood. The amount of bleeding did not appear to be affected by exercise, and as his general health did not suffer, he did not call in any doctor until after it had persisted for a year. The doctor who saw him passed a catheter, and for some cause or another the bleeding from that time wholly ceased for one year. At the end of that time hæmaturia was again present, and a surgeon being called in, a perineal opening into the bladder was made and a portion of tumour removed.[1]

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[1] Two examples of this were shown under microscopes. In both all the cell elements were absent, only a connective tissue basis remaining.

When a patient comes before us with a history of hæmaturia which presents these characters, the presence of a tumour in the bladder is strongly indicated. How is the diagnosis to be made? I at once *reject the sound* as an aid in such cases further than that it may enable the surgeon to say no stone is felt. *A bimanual examination* along with the sound may be made, but only tumours of large size can be thus detected. But even grant that a provisional diagnosis of the presence of a tumour can from the history and by such means be made, there is still room for error; and, further, we have no information regarding—*1st*, its size; *2nd*, its attachments; *3rd*, its characters (benign or malign); and, *4th*, whether it is removable; and yet all these are points of great importance so far as prognosis and treatment are concerned. I admit that clinicians have formulated a rule regarding hæmaturia as an evidence of malignancy or innocence, viz., that in the former it is usually preceded or associated with pain, frequency of micturition, or other urinary symptoms, while in the latter there is simply painless bleeding. Such a difference in the hæmaturia from malignant and innocent tumours I have not observed; and certainly in Case II., which I have quoted, hæmorrhage was the first and only symptom for eight months. I am of opinion that it altogether depends on the stage at which we see the patient. If he comes before us at an early period, it is usually on account of hæmaturia unaccompanied by any other symptom; and to satisfy ourselves regarding the above points, only two methods of procedure are open to us—

1st, *Cystoscopy*, *i.e.*, to see the tumour.
2nd, *Cystotomy*, *i.e.*, to feel the tumour.

I have in a previous paper[2] contrasted these two procedures, and it now suffices for me to say, that in my opinion—an opinion supported by many surgeons—the former should be invariably tried before the latter. A rule has been laid down for many years, and is still, I think, adhered to, regarding stone in the bladder, viz., that before cutting for stone "the patient having been anæsthetized, the staff should be introduced, and the stone struck by it, the click being heard by the operator and by one other person at least. If after a fair search the stone is neither heard nor felt, no operation can take place, and the search must be resumed on another day" (Sir Henry Thompson, p. 260, vol. iii., Holmes' *System of Surgery*). Only the other day a well-known surgeon of great experience gave me an instance, which had occurred a week or two previously in his practice, where he had to desist from operating, as he could not feel the stone when the patient was on the table. The one pathognomonic sign of the presence of stone, before the introduction of the cystoscope, was to strike it with a sound. It mattered not how certain the surgeon might be of the presence of stone in the bladder, unless he felt it he did not cut the patient *for stone*. Why should we depart from or omit such a rule when dealing with a vesical tumour? If we have a pathognomonic sign relating to tumours, why not take advantage of that sign so far as possible? I am prepared to asseverate that the cystoscope can be used safely, and it ought to be an invariable rule to examine cases of suspected tumour with the cystoscope; if we fail by its aid to corroborate or reverse the provisional diagnosis in the case, by all means perform a diagnostic cystotomy, being prepared at one and the same time to treat the case. I consider, then, that it is as unjustifiable to cut a patient for suspected tumour as it is for suspected stone until all our means of diagnosis short of cutting have been exhausted. I speak thus strongly because I know that there are still some surgeons and physicians who do not believe in the cystoscope, and I desire to impress upon them my firm conviction, based on considerable experience, that it is an instrument of the highest value, and in the majority of cases can be used without either a local or general anæsthetic, cause the patient during the examination no pain, and leave no bad effect. At the same time I admit there are cases where, from one or other reason, it cannot be used, and in these cystotomy must be had recourse to (*v.* previous paper).[1]

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[1] The further history of this patient is interesting. Six months after the first (perineal) operation suprapubic cystotomy was performed, and a large papilloma removed. One year later a third operation was had recourse to, when it was found that a multiple papillomatous condition existed. Very many tumours were present, each pedunculated and varying in size from a pea to a Tangerine orange.

[2] *Edinburgh Medical Journal*, 1891.

In favourable cases the cystoscope can determine—1, the presence; 2, the site; 3, the superficial attachment and size of the tumour; but with it we cannot tell whether a sessile tumour is merely implanted on the bladder wall or is infiltrating the muscular coat. Further, we cannot invariably decide from the appearance of the tumour, even in the light of the history and symptoms, whether the tumour is malign or benign. But can we tell more by digital examination? How often is the surgeon in doubt regarding the nature of tumours in other parts of the body, although of such tumours he has much greater experience than of tumours of the bladder!

In some cases no doubt we do gain an approximate idea of the nature of the tumour from the appearances presented cystoscopically. Thus in one case I observed a rough irregular ulcer, about the size of a crown piece, with raised edges, and at parts with grey sloughs in process of separating, and I expressed the view that we had to deal with an epitheliomatous ulcer, a view which was afterwards proved to be correct. On the other hand, in the case shown under microscope (Haig)[1] the appearance presented was that of a typical pedunculated villous papilloma, and yet on microscopic examination it proved to be an epithelioma, which recurred, and resulted in the death of the patient three months after the operation. Albarran in a guarded manner says, that if the tumour be villous, with a thin pedicle, it is probably benign; while if, on the contrary, the villi spring from a more solid surface—*i.e.*, seem to be implanted—the tumour is more probably malignant. No doubt, as I have previously pointed out, as we gain more experience of the cystoscopic appearances and subsequent microscopic examination of tumours, we shall be able to judge of their nature more correctly.

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[1] *Op. cit.*

Let me now say a few words regarding the *prognosis* of tumours of the bladder. Statistics show a vast preponderance of malign over benign. In my own cases, as I have already stated, twelve were microscopically examined, and of these seven were epitheliomata. Four were papillomata; but from statistics given by Albarran I find that the proportion of malignant cases is much higher. Thus of 88 cases of primary tumour of the bladder which he personally examined there were—Simple epithelial, 13; malignant epithelial, 68; fibromata and fibro-myxomata, myomata, angioma, 4; sarcomata, myxomata, myxo-sarcoma, 3,—*i.e.*, 71 malignant, 17 simple.

Further, in a series of 41 cases by Bazy, Dittel, Iversen, and Israel, 32 were epitheliomata, 9 papillomata; while Guyon in 22 cases found 19 malignant and only 3 benign.

Barling, writing in the *Birmingham Review* in October of last year, says,—"Of the total number of cases inquired into and examined, viz., 260, 141 were innocent, and the remainder malignant tumours;" but goes on to say that "it is probable this does not represent their relative frequency, and that the proportion of innocent growths is greatly exaggerated."

A very general belief is that pedunculated tumours are simple; but according to Albarran this is not necessarily so, and he states that in 28 cases examined by him 15 were malignant. No doubt this is a smaller proportion than in sessile tumours, even when they are merely implanted, not infiltrating.

From my notes I find that the youngest patient examined with epithelioma was 43 years of age, while in one case of papilloma the patient was 55 years of age. Although papillomata are most frequently found in adults below 50, they have been met with in patients 70 years of age. So with epitheliomata. Although most frequent in adults between 50 and 60, yet they do occur before 40.

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[1] Two sections of this tumour were shown.

It has to be noted further—and stress is laid on the fact by Barling, Albarran, and others—that a transition may take place from a simple to a malignant tumour. I have met with cases which seem to bear this out. Thus in a patient aged 43 years, from the history there was little doubt that the tumour began to infiltrate after having been present for two or three years, and on examination it was seen that the part which projected into the bladder was indistinguishable from a simple villous papilloma, while the other portion infiltrating the bladder wall was decidedly malignant.[1]

Treatment.—In the female small simple tumours may be satisfactorily removed *per urethram* after dilatation of the urethra, but in many cases this is unsatisfactory. In a patient I saw with Dr Haultain the tumour was removed twice *per urethram*, but recurred, and eventually a suprapubic cystotomy was performed and the tumour successfully removed. The operation was performed seven months ago, and Dr Haultain informs me that she is at present in good health, and has had no further urinary symptoms. The tumour was a papilloma. In the male, cystotomy is a necessity. It is, I think, now generally admitted that the suprapubic operation gives much better access to the bladder than the perineal; and statistics, although not nearly so numerous of the high as of the perineal operation, go to show that it is a safe procedure. I think we may take it, therefore, that surgeons open the bladder suprapubically in preference to making a perineal opening, and further, that the cases progress satisfactorily. I need not detail the preliminaries to the operation, nor the mere opening of the bladder, further than by stating that the value of Petersen's bag is generally recognised, and that in exposing the bladder and in cutting into it the rule is to keep close to the pubic symphysis, thus avoiding the peritoneum, which, if lower down than usual, may be stripped upwards off the bladder and pulled out of the way. The pubo-prostatic ligaments guide the operator how far he may pass downwards without risk of opening into the pelvic fascia. Much room, as Mr Chiene has pointed out, may be got by dividing the recti tendons transversely at their attachment to the pubis, without in any way increasing the risk of urine infiltration. That this is so is also borne out by the fact that Trendelenburg advocates a transverse incision in preference to the vertical. On the anterior aspect of the bladder there are a number of veins which can usually be pushed aside so as to expose its surface. When the surface is thus exposed, a double sharp hook is fixed in its wall to steady it, and then, having emptied the Petersen's bag, the surgeon *plunges* in a sharp knife and cuts from below upwards, the incision being of a size to admit one finger, which is instantly introduced, so that the interior of the viscus can be thoroughly explored before the contained fluid escapes.

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[1] Several microscopes were shown to illustrate this.

The bladder having been opened into, the edges are caught with Pean forceps, and the tumour being exposed, it is laid hold of with forceps (pile forceps are most useful for this). Sponges are used to dry out the bladder, and the tumour is pulled into view, if possible, and clipped away with scissors; the base is then scraped with the finger nail or a Volkmann spoon. This can all be done, as a rule, by sight—not merely by touch—as an electric light can be thrown into the bladder so as to thoroughly illuminate its interior.

Bleeding may be free, but is readily enough arrested by pressure. If there is an actual vessel spouting, it can be caught with forceps and ligatured. When there is severe general oozing from a large surface, it can be readily stopped by washing out with hot water.

After Treatment.—The tumour having been very thoroughly removed, as described, the opening in the bladder may be partially closed with catgut sutures, and Antal's or Guyon's double tube introduced. The muscles are stitched together with catgut, and the skin with horse-hair. Wood-wool dressing is put over the wound to absorb the urine, and requires frequent changing. The bladder is gently washed out daily through the double tube with warm boric lotion. In two days the tube is removed, and in about ten days or a fortnight the urine begins to come the right way. The wound heals in from five to seven weeks.

Results.—It is at all times rather difficult to follow out the after-history of patients, but I may say that in five of the cases about which I have been able to get information, three who suffered from simple tumours are still alive and well,—one after 2½ years, one after 8 months, one after 6 months. Of two who had epitheliomata, one has had no bad symptoms for eight months, while the other died three months after the operation from recurrence of the disease and secondary urinary trouble. In the latter case, before operation the patient was much reduced by severe and prolonged bleeding. After the operation bleeding for a time wholly ceased, and he gained flesh.

Conclusions.—1. Tumours in the bladder are now known to be of more frequent occurrence than was formerly supposed.

2. The history of hæmaturia and its character may be strongly indicative of the presence of a tumour.

3. Positive evidence of the presence of tumour by the detection of portions of tumour or characteristic cells is seldom got from the urine.

4. Cystoscopic examination, although not always possible, in the majority of instances enables us to detect the tumour when present.

5. With the cystoscope we are enabled to tell the site, size, and superficial attachment of the tumour, and approximately its character.

6. No evil results attend the use of the cystoscope.

7. Tumours in many cases can be thoroughly removed from the bladder.
8. Suprapubic cystotomy gives the best access to the bladder.
9. The proportion of malignant tumours as compared with innocent is very high.
10. Sufficiently good results follow the removal of malignant tumours to justify operation.

VI.—MODERN VIEWS ON LUPUS.

By NORMAN WALKER, M.D., F.R.C.P. Ed., Assistant Physician for Dermatology, Edinburgh Royal Infirmary.

THIS paper has in view two objects—viz., to enter an emphatic protest against the views enunciated in the December number of this Journal by Mr J. L. Milton, and concurrently to present, in as concise a manner as possible, the present day views on this important subject.

Of course I cannot point to a series of nearly five hundred cases of lupus, a large proportion of which, as we gather from Mr Milton's paper, have been so successfully treated that he has never heard of a relapse; but I have had the opportunity during the last few years, in different parts of the world, of observing, under the care of the leading dermatologists, a very large number and variety of cases of the disease.

To deal firstly, then, with the cause of lupus.

With one or two notable exceptions,[1] the modern dermatological world is agreed that lupus—and in using the term lupus I mean only the vulgaris variety—is a form of tuberculosis of the skin.

Mr Milton appears to think that the only evidence in support of this is the (admittedly rare) *demonstration* of the tubercle bacillus in sections of the tissue. Why, before the tubercle bacillus was ever heard of many observers had satisfied themselves that it was at least in the highest degree probable that lupus was essentially a tuberculosis.

For what is the histological structure of lupus? Here, dealing with facts, we are on safe grounds.

A lupus nodule consists, in its earliest stage, of a collection of cells distinctly larger than leucocytes, and with nuclei varying in shape from round to markedly oval. These are "epitheloid" or "plasma" cells, and by whatever name they are called they are by all admitted to be derivatives of connective tissue—rapidly proliferating connective tissue cells. Around and among them is found a varying number of round cells—leucocytes—which are invariably found in the presence of any irritation. In nodules which have existed for any length of time there is usually present a considerable number of giant cells. Lastly, these nodules tend to break down in the centre.

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[1] The exceptions are Kaposi, Schwimmer, Hardy, and Mr Jonathan Hutchinson. Mr Hutchinson groups a very large number of diseases under the name lupus, and "does not regard lupus as a specific or even a well-specialized disease." He considers, however, that there are good grounds for associating it with scrofula. Kaposi's position is not so easy to understand. He draws a very wide distinction between lupus erythematosus and lupus vulgaris, admits that in its histology the latter is very closely allied to scrofuloderma and *true* tuberculosis of the skin, admits its granulomatous nature (the presence of the tubercle bacillus is undeniable), but denies its tubercular origin. Vidal and Brocq, who were formerly opponents of the tubercular theory, have now accepted it.

Now, what is this structure but that which is recognised everywhere as a granuloma. The list of the granulomata is not a long one, and were one only to diagnose by exclusion, the diagnosis of tubercle would probably be reached.

It was the presence of giant cells which first suggested to Friedländer the tubercular nature of the malady; and though they have been found in other processes, they are nowhere found so constantly or in such numbers as in tubercle.

When, after Koch's great discovery of the relationship of the tubercle bacillus to tuberculosis, Demme and many others demonstrated the presence of the tubercle bacillus in the lupus tissue, surely it was no unwarrantable stretching of the argument to assume that the disease was a tuberculosis.

In regard to the presence of the bacillus in the tissues, I have advisedly used the word demonstration. Mr Watson Cheyne, in his work on *Tuberculosis of the Joints*, has pointed out that among the bacilli which retain the stain after being treated in the usual way, there are to be seen, with varying degrees of distinctness, others which have not done so, and which are therefore most difficult to see.

Although it may at once be admitted that the detection of the tubercle bacillus in lupus tissue is far from an easy task, it is certainly the case that the more skilled and experienced the observer the more likely is the search to be successful.

But apart from all this there remains yet another and a more delicate test,—one not so easy to carry out in this country, but one which, properly carried out, has given the most definite and unanswerable results,—viz., inoculation, which, especially in the hands of Leloir, has proved in almost every case the tubercular nature of the disease. In that class of cases which he has named L. *sclerosus*, where Nature has practically cured the disease, experimental inoculation was not followed by tuberculosis.

Then Mr Milton considers the attempt to separate lupus vulgaris from lupus erythematosus "to be a complete mistake." Now, this question was discussed at the recent Dermatological Congress in Vienna, held only five months ago; and with two exceptions—Mr Jonathan Hutchinson and Dr Allan Jamieson—the Congress was unanimously of opinion that the two diseases were absolutely distinct, and that lupus erythematosus had no connexion with lupus vulgaris.[1]

The fact that Mr Jonathan Huchinson includes a very large variety of diseases under the name of lupus has been already alluded to, while Dr Jamieson's view was that the erythematous form might bear the same relation to the common as does anæsthetic to tubercular leprosy.

Mr Milton then refers to the want of evidence of *direct* infection, and grows humorous over the bacillus which "can traverse miles of open country to reach some lonely cottage, and yet cannot overleap the simple barrier which stands between sister and sister, between husband and wife."

Here I must remark that nowhere in Mr Milton's paper does he allude to the bacillus as that of tubercle. Indeed, in referring to Besnier's long since expressed views, that lupus is a strumoderma, he says that in his opinion that doctrine must be entirely rejected. But it was not because the tubercle bacillus was found in the lupus tissue that the disease was supposed to be tubercular; but because the disease was supposed to be tubercular that the bacilli were sought for and found; and no one, so far as I am aware, has even suggested that the disease is due to a specific organism—a bacillus of lupus.

Cases where lupus has induced lupus are certainly very rare—the bacilli are few in number and probably of feeble vitality—but every dermatologist must have seen a number of cases where direct communication from a tuberculous subject was practically demonstrable. I have seen lupus on the hands of an elderly woman[2] who herself suspected that it was caused by washing the clothes of her daughter who died of tuberculosis, and I have seen other cases where careful inquiry could trace what was at least a most probable source of infection.

But tuberculosis is not exclusively confined to humanity. Might it not be that in Mr Milton's lonely cottage, or rather in the byre attached to that rural spot, there existed a tuberculous cow, which, bearing with it millions of tubercle bacilli, had traversed the miles of open country, and thus been the unsuspected cause of the malady?

Mr Milton says that lupus may be caused by injury, and he describes a variety as *lupus traumaticus*. Lupus may undoubtedly start from an injury, but there must be *plus* the injury the tubercle bacillus. Without a doubt other factors are present, otherwise lupus would be very much more common than it is; but the same holds good of tuberculosis of other organs; and though Mr Hutchinson, in the October number of his *Archives*, mentions that lupus is very rare in Bavaria, although phthisis there is as common as in Bohemia, where lupus is very frequent, we can hardly sit down and accept Mr Milton's doctrine—a doctrine somewhat similar to the Presbyterian one of election—that one in eight thousand nine hundred and fifty people must look forward to suffering at some period of their lives from lupus.

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[1] Boeck expressed the view that there might possibly be some connexion between them, but admitted the difference.

M'Call Anderson, who was not present at the Congress, in his book classifies L. erythematosus as a tubercular affection, and so far as I know has not altered his views since his book was written.

[2] The old view, that lupus is a disease exclusively of the young, must undoubtedly be abandoned.

On passing to the subject of treatment, Mr Milton refers first to tuberculin, and mentions that he had seen one case which was cured, and out of thirty cases treated by his colleague Dr Dockrell, all improved, and two did not relapse; and he concludes by saying—surely rather unfairly—that it is not easy to see how failure could have been more complete. It is perhaps useless to say much about the treatment of lupus by tuberculin or any of its derivatives, for at present, at least, the remedy will hardly be used in general practice. Still, in spite of Mr Milton's unfavourable opinion, a number of dermatologists occasionally use one or other form, and presumably with benefit.

Regarding local measures, Mr Milton can hardly find sufficient condemnation for the usual surgical treatment. Excision is the worst treatment, and scraping with the sharp spoon comes next. In reading this part of his article one gathers the impression that he does not believe in local application at all, for he refers to the "mildest local means," which are strictly subordinated to the "comprehensive internal treatment." In reading further, however, we find that these mild local applications include 95 per cent. (practically pure) carbolic acid; permanganate of potash, ʒj. to ℥j.; solid nitrate of silver and pure chian turpentine: some of them excellent applications in lupus, but hardly warranting the term "mild."

To his internal treatment he ascribes all the benefits, and divides internal means into three classes,—those possessing some control over the disease, those of doubtful value, and those of no value at all. The first class comprises arsenic, calomel, and saline aperients, and in certain cases iodide of potash; the second, antimony, soda, borax, mercury, phosphorus, cod liver oil, and mineral waters; while the third contains acids, bitters, sedatives, alteratives, and sudorifics, and presumably the rest of the Pharmacopœia. Briefly, the drugs Mr Milton recommends as curative in lupus are mercurial and saline aperients and arsenic.

Now there is around us such a general belief in the power of arsenic to cure all and every variety of skin disease that one almost hesitates to criticize this treatment as an adjunct to adequate local means, and indeed some dermatologists speak well of it as a tonic in cases of lupus; but when it is put before us as *the cure* for lupus, one rubs one's eyes and wonders when this paper was written. Why, this treatment was used fifty years ago, before anyone dreamt of the tubercular nature of the malady, and was so unsuccessful that it was followed by the introduction of strong caustic applications—applications which aimed at destroying the disease and all around it.

I do not doubt that under this treatment some cases of lupus have got better; so do others under no treatment at all; but that a considerable proportion of cases are completely cured by it is absolutely incredible. To believe it is to stultify the whole race of living dermatologists, all of whom—many with enormous experience in lupus—attack the disease with active local measures.

Of course, with Mr Milton's views as to the etiology of the disease we have no common ground of argument as to rational treatment; but taking the view which I hope I have shown conclusively to be the satisfactory one, what is the rational treatment? What surgeon would treat a tuberculous knee-joint, which threatened to or had already formed sinuses, with arsenic and saline purgatives?

We have to do in lupus vulgaris with a local tuberculosis, and the treatment simply consists in following general principles. When possible, thorough excision would appear to be the best treatment, and it is a treatment which is followed by several men of experience. The success of "Thiersch" grafting has much widened the field for this method.

Unfortunately, on account of its frequency on the face this is not often possible, and then other means must be sought. Of these, scraping with the sharp spoon is a treatment which does not lay the patient long off work, and is often followed by long periods of quiescence. Multiple scarification, too, is in the hands of some operators very satisfactory, and Veiel of Cannstadt uses multiple puncture. The theoretical objections to these "bloody" methods, on the ground that they are liable to cause a general infection by setting free the bacilli, are not corroborated by the results of ordinary surgical treatment of tuberculosis of the joints, etc. Most useful, however, to the general practitioner are those local medicaments which can be simply applied.

All of them act on this basis. The tubercular structure is one of low vitality, and destructive applications act on the diseased tissues in different degrees much more than on the healthy tissues.

Of these, the old arsenical paste is one of the most demonstrative. After a continuous application for three days and nights the lupus tissue stands out as a grayish necrotic mass against the inflamed but comparatively uninjured healthy tissue. Then under simple dressings the inflammation subsides, the sloughs separate, and the surface heals. The application is painful, causes a good deal of swelling in the neighbourhood, but is often followed by long periods of quiescence.

The solution of the acid nitrate of mercury (B. P.) is another convenient form of treatment. It causes some, but not so much inflammation and pain as the arsenious acid, and under its use much improvement takes place. It should not be applied oftener than once a week. Neither of these should be applied over large areas at a time.

Then we have the treatment by the solid stick of nitrate of silver, which, some years ago at least, was Kaposi's favourite treatment. It is a combination of the mechanical and the local medicinal treatment. Using it as a sort of plough, Kaposi gouges through the diseased tissue in every direction. There is no difficulty in telling, from the sense of resistance, when the limit of diseased tissue has been reached. This treatment is most applicable, I think, when there is a somewhat extensive "ulcerated" surface.

Carbolic Acid.—Any one who has accidentally dropped on his hand some pure carbolic acid will hardly apply to it the term mild. It is, however, often useful. Like arsenic and the acid nitrate, it cannot be applied over large surfaces on account of the pain it causes, which, however, soon passes off; but to isolated nodules it is an excellent daily application, causing them to slough out in about a week. For this purpose it can be entrusted to the hands of intelligent patients without any risk. It should be applied to the little cavity from which the slough has separated for some days.

Perhaps the drug most in favour at present for the treatment of lupus is salicylic acid. Salicylic acid has a very marked keratolytic action—*i.e.*, it has the power of, so to speak, dissolving the epidermic layer. This power it also possesses over tubercular tissue with its low vitality, boring out the diseased nodules in a very marked way. It may be used as an ointment of from ten grains up to a drachm or more to the ounce, and in this form I have seen it cause much improvement; but perhaps the favourite method of applying it is in the form of Dr Unna's plasters in combination with creasote. According to Unna, creasote is *the* anodyne of the skin. If so, the skin is badly off for anodynes, for the pain of the application is very considerable,—indeed, one patient told me she would as soon have the arsenical paste.

The plasters are made in different strengths, but unfortunately they are not expressed in percentages, and the information that half a square metre has spread on it 20, 30, or 50 grammes of salicylic acid does not convey much to our insular minds. The strength used should be as much as the patient can stand, as the stronger the application the more thorough the results. The most satisfactory results are obtained when the patient can wear the plaster until the surface heals under it, but on account of the pain this is only rarely possible.

Sometimes the cautery gives good results; but then, of course, the proceeding comes under the nature of an operation, and chloroform is necessary,—for if cauterization is to be employed, it should be thorough.

Regarding the cure of lupus, it is best not to be too sanguine. Certainly with no treatment can any one promise a cure, at least with a certain prospect of his promise being fulfilled; but if the patient carry out his instructions thoroughly, and return on the first sign of a relapse for further treatment, I believe most cases can be entirely kept at bay.

That cases have been absolutely cured I do not doubt; but my experience has not been sufficient to warrant that assumption in any single case, although cases have been shown to me where the disease had remained for years in abeyance.

Mr Milton complains that the writers on the subject merely mention a large variety of treatments, and do not say which they have found most useful. My personal experience is, of course, comparatively small; but my impression is, that while the salicylic acid treatment is very valuable, that the painting of the part with the solution of the acid nitrate of mercury is a most simple and a very satisfactory form of treatment. Of one thing I am quite convinced, that any one of the treatments I have mentioned will have vastly more tendency to cure lupus than arsenic and saline purgatives.

VII.—A CASE OF ACQUIRED UMBILICAL FÆCAL FISTULA.

By W. Ramsay Smith, M.B., C.M., B.Sc. Edinburgh.

(*Read before the Edinburgh Medico-Chirurgical Society, 7th December 1892.*)

This case came under my care while I was acting as substitute for Dr Simson Fowler at Juniper Green, and by Dr Fowler's kind permission I am able to report it.

The subject was a girl, somewhat over 2 years of age, dying from chronic intestinal catarrh of five months' duration. When I first saw her on August 3rd she was emaciated to the last degree, and all that treatment could do was merely to palliate her misery. On August 10th I was informed that fæces were passing by the navel, where there had been a slight redness for two days previously. Examination of the abdomen (Dr Fowler happened to be present also at the time) showed a slightly everted umbilicus, with a tumid, well-marked, rounded margin surrounding an opening sufficiently large, as shown when fæces were passing, to admit the patient's thumb. There was no appearance of inflammation or ulceration of the adjacent structures, nor was there any valve,—the appearance presented may be best compared to that seen on looking through the hole in a miniature circular water-cushion or a life-buoy. The fistula was discharging fæces and flatus with considerable force. The fæces had all the characters of the contents of the lower part of the ileum; and as the bowels were moving at the same time, the contrast between the excretions from the two sources was very apparent.

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occurrence and the size and connexions of Meckel's diverticulum made me at once think of a patent omphalo-mesenteric duct as the explanation of the fistula. Subsequent consideration of the subject has only served to confirm my first thought by excluding all other possible explanations as extremely improbable; and I think it is quite unnecessary for me to state improbable conjectures.

At the first appearance of the fistula and the free discharge of fæces from it, the amount of fæces passed by the anus was considerably diminished; and the two outlets continued to discharge simultaneously, and with a constant ratio as to the amounts passed, until the patient died, five days later, on August 15th.

Congenital umbilical fæcal fistula is not very uncommon; but the acquired form is very rare. In Mr J. Cooper Foster's *Surgical Diseases of Children* a case is recorded, resembling in general features the one I have just described; and the two cases are of such interest that I make no apology for quoting Mr Foster's case and comparing the main features of the two.

"A little boy, aged five, was admitted in December 1857, with a fistulous opening at the umbilicus, large enough to admit the little finger. This had existed three weeks, and was believed to have been caused by tubercular inflammation (?) connecting the colon and abdominal wall, and finally suppurating externally. The child was in a miserable plight, the fæces escaping to the amount of several fluid ounces daily, and very small quantities passing by the anus. The fæces from the umbilicus had an offensive odour, and were of such a character that little doubt could be entertained that the bowel involved was the transverse colon. The edges of the fistula were pared, and the adjacent skin slightly dissected up, to allow the closure of the aperture. The parts were accurately retained in position by a quilled suture, with three ligatures. On the second day after the operation a good motion was passed *per anum*, and until the fourth day no fæces whatever had escaped by the wound. The sutures were then removed, and it was found that the union was complete, except in a track scarcely large enough to admit a probe, and through which a few drops of almost colourless fluid escaped daily. All the fæces continued to pass *per anum*, and the child left the hospital much improved in health.

"The only efficient treatment of this affection is that which was adopted in the above cases. And this is not always successful. In the case last reported, though the child went out pretty well, I have since heard that the symptoms have again increased. Nor when we remember the anatomical condition of the parts involved—how near to the abdominal parietes the posterior wall of the bowel extends, and how small and crooked a passage is left for the fæces when the external opening is closed—can we be surprised that this should be the case. Any one who should devise a means by which a more perfect restoration of the natural canal could be effected would confer upon all sufferers from fæcal fistula a great boon."

Regarding Mr Foster's case, the following remarks at once suggest themselves. Mr Foster by his mark of interrogation expresses doubt as to tubercular inflammation being the cause of the umbilical fistula. He does not state his grounds for his doubt; but any one intimately acquainted with the character and relation of the parts at the umbilicus, and with the topographical anatomy of the abdominal wall and transverse colon, will at once grant that the possibility of tubercular ulceration being the cause is extremely small. For my own part I should imagine it well-nigh impossible.

Mr Foster had little doubt, judging from the character of the fæces, that the part involved was the transverse colon. But the differences between the contents of the transverse colon and the contents of the lowest part of the ileum are not, I think, sufficiently well marked to enable one to say which is which. And when one considers that an ulceration of the transverse colon would almost certainly have shown the valve-like appearance of fistulas of the colon, which evidently was absent in his case, I believe there can be no doubt that Mr Foster's case was essentially similar to the one I have now reported. Most probably the possibility of a Meckel's diverticulum never presented itself to Mr Foster's mind.

Acquired umbilical fæcal fistulas are evidently rare; so also, but to a less extent, are Meckel's diverticula. But it is not here a question of the mere coincidence of the occurrence of two rare and unrelated phenomena, as one might imagine at first thought, but a case of the occurrence of one phenomenon which is almost inconceivable without the occurrence of another as its satisfactory explanation.

With reference to tubercular inflammation as the cause of such a condition, Mr Foster was doubtful of it as a cause in his case (from which I infer that he did not find evidence of its presence), and I certainly found not the slightest trace of it in mine. The subsequent history, too, of Mr Foster's case tends to confirm my view of it, for, instead of the tortuous opening he speaks of as forming a barrier to the passage of fæces, there seems to have been no barrier whatever, a good motion passing by the anus the day after the operation.

A question arises, Why should a diverticulum become patent? This may be explained, and the explanation holds for both cases, by the great wasting of tissue at the part, all fat being gone, and the fibrous tissue being so badly nourished that it gave way with the strain, and allowed the opening up of a passage that had never been very well closed.

In the case I have described there was no post-mortem examination. The case, though one of much interest embryologically, was of trifling importance clinically; and to have urged an examination simply for scientific curiosity would have been quite unjustifiable in the very peculiar circumstances of the family. So far as inferential reasoning can go, I think the diagnosis was beyond doubt correct, that the case was one of acquired fæcal fistula due to patency of a Meckel's diverticulum.

Part Second.

REVIEWS.

A Treatise on Peripheral Neuritis. By JAMES ROSS, M.D., LL.D. (Aberd.), F.R.C.P., late Physician to the Manchester Royal Infirmary; and JUDSON S. BURY, M.D. (Lond.), M.R.C.P., Senior Assistant Physician to the Manchester Royal Infirmary. London: Charles Griffin & Company, Limited: 1893.

SUGGESTED by Graves in 1828, hinted at by Landry in 1859, it was not until 1864, or only twenty-nine years ago, that Duménil of Rouen proved the existence of multiple peripheral neuritis. The volume before us is an eloquent witness to the power and thoroughness of modern research. Although twenty-nine years have elapsed since Duménil luckily encountered the tailor who was suffering from this disease, it is not more than twelve years since the peripheral nature of the malady has been more generally accepted. Up to that time the brain and the spinal cord were looked on as the sole offenders, just as the heart and large vessels were held accountable for many symptoms which have now been shown to be dependent on the state of the smaller arteries and arterioles. All paralyses were, and often are even now, ascribed to central lesions. The lamented death of Dr Ross before the completion of the work has fortunately caused no impairment of its value, for Dr Bury has continued the subject on the lines laid down beforehand with great discretion and ability.

The first part of the book consists of an analysis of ninety-three cases of acute ascending paralysis, more commonly known by the name of Landry's paralysis. Curiously enough, although Landry himself seems to have suspected the peripheral nature of the disease, his hints were lost on a succeeding generation, until the likeness between many of the symptoms and those of diphtheritic and other toxic paralyses again drew attention to the point. In nearly all text-books Landry's paralysis is grouped with affections of the spinal cord, although the authors confess that changes have seldom been found in either the white or gray matter. Although the disease is, as a rule, rapidly fatal, not very many of the cases whose histories have been collected by Dr Ross were subjected to post-mortem examination, and in still fewer was any examination made of the state of the peripheral nerves. To particularize, post-mortems were performed in forty-two cases; in twenty-six of these microscopic investigation of the medulla and the spinal cord failed to show anything sufficiently weighty; in nine only were the nerves examined, and in six only of these was there any evidence of neuritis. From these six autopsies Dr Ross opines that "the balance, therefore, of the evidence afforded by morbid anatomy is largely in favour of the view that the essential lesion is to be found in diseases of the peripheral nerves and nerve-roots, rather than in the nerve centres." He previously, however, admits that the course of the disease is often so rapid that changes might take place in the nerves invisible to the microscopical eye, but, nevertheless, sufficient to cause the symptoms. The same argument might be turned to account in explaining the immunity of the cord from gross lesions. More important, perhaps, are his endeavours to trace many of the recorded cases of Landry's paralysis to a toxic origin. Six, he satisfies himself, were diphtheritic in origin, seventeen alcoholic, while twenty-eight were caused, in his opinion, by various poisons, as variola, enteric fever, rabies, and so on. Thirty-five cases remain unaccounted for. The premises for some of the conclusions seem to us rather insufficient; as, for instance, when the commencement of the symptoms in a case takes place in the festive season, the beginning of the year, they are attributed to alcoholic excess. Dr Ross, in the analysis of these cases, we must admit, seems to be ready to swallow many camels while straining at a gnat.

Dr Cramer (*Centralblatt f. Pathologie u. pathologische Anatomie*, January 1892), after an admirable analysis of the subject, comes to the conclusion that the peripheral nerves, either with or without the central nervous system as well, may be diseased, and that the disease originates from micro-organismal invasion. Klebs (*Deutsche Med. Wochenschrift*, 1891, No. 3) in a very careful analysis of a case could find no lesion of the peripheral nerves, but discovered the presence of a hyaline thrombosis of the central artery of the cord and of its branches, especially in those going to the anterior cornua. He ascribed the thrombosis to enzymes of micro-organisms. The affection of peripheral nerves he looks on as a complication. Gowers, in his *Diseases of the Nervous System*, regards the gray matter of the cord as the seat of the lesion.

It seems to us that if a broad view be taken of the matter, that which is termed Landry's paralysis is in reality caused by affections of different portions of the nervous system. As originally described, one of the distinguishing features of the disease was the absence of any *pronounced* sensory disturbance, a fact incompatible with an acute neuritis. As now described, some cases experience severe sensory phenomena, while others, with identical paralytic symptoms, are spared any marked disorders of sensibility. The authors of this volume look on these two classes as one. Is it not more likely that in one the condition is chiefly caused by an acute multiple neuritis, in the other by some form of myelitis? Both may be primarily caused by a toxine. Another disease due to the antagonism between micro-organisms and mankind!

A consideration of the subacute and chronic varieties of paralysis resulting from peripheral neuritis ends the first part of the book.

Toxic multiple neuritis is the next subject taken up, and cases caused by alcohol, carbon monoxide, carbon bisulphide, naphtha, and other coal-tar products, or the diffusible stimulants, are included. The neuritis caused by animal poisons is now described, followed by that proceeding from the metallic and by the endogenous poisons. All these forms are very fully and carefully described, a copious bibliography being given at the end of each section.

The volume ends with a description of the various dyscrasic, trophic, and irritative forms of neuritis. It is a pity that a more general survey of the relations between Raynaud's disease, paroxysmal hæmoglobinuria, and peripheral neuritis has not been included in it. The fact that in some undoubted cases of symmetrical gangrene the nerve-trunks have been found much degenerated as the result of previous inflammation, and that the paroxysmal nature of the complaint and its dependence on cold seem to dispose of any argument for its bacterial origin, would point to the possibility of neuritis occurring from other causes than those chiefly insisted on in this treatise.

In conclusion, we may give the following summary from p. 409: —(1.) The chief cause (of peripheral neuritis) is a chemical poison. (2.) The poison affects all parts of the nervous system, but to a very unequal degree in different cases.

It only remains for us to express our high appreciation of the book, which is a monument of industry. It should be carefully read by all.

The Principles and Practice of Medicine, designed for the use of Practitioners and Students of Medicine. By WILLIAM OSLER, M.D., F.R.C.P., Professor of Medicine in Johns Hopkins University; Physician in Chief to the Johns Hopkins Hospital, Baltimore, etc. Edinburgh and London: Young J. Pentland: 1892.

AMONG the recent text-books on Medicine there have been several of a high order of merit. Hilton Fagge's great work is a masterpiece of excellence and industry. The work by the present author is of another description, but, nevertheless, presents many good qualities. In the first place, he assumes that his readers have an extensive knowledge of the minutiæ of his subject,—the physical signs and symptoms of disease. In few places does he condescend to particularize. He terms his book one for practitioners and students of medicine, but it appears to us that it is more for the former than for the latter, unless, indeed, these be far advanced. We doubt if a beginner would benefit much by a perusal, however careful, of this volume. It is a question how far an author of a text-book should presuppose any knowledge of the subject at the hands of his readers. Some go on the assumption that they know nothing, and therefore try to give everything. Our author does not reason in this manner, and therein will lie the charm of his book for many. He touches lightly and airily on many subjects in the course of the volume, just sufficiently to give his readers a glimpse of what his opinion of the matter is, to rouse their interest in it and set them thinking over it, without at the same time causing any feeling of weariness.

All subjects requiring full elucidation in a practical manner, such as the analysis of urine, except in their broadest sense, are omitted, and the reader referred to special works or monographs on these subjects. Again, neither in the consideration of the diseases of the respiratory or circulatory systems is there any general synopsis of methods or of signs. How far this arrangement is right is a matter of doubt; we confess to finding it very pleasant. But in some places a more general survey might be advisable; for instance, in the case of the effect of compensation or the want of compensation in valvular disease of the heart with the attendant train of symptoms. Here the different lesions with their effects are considered *seriatim*, only the treatment being grouped separately.

So much for the arrangement. As to the matter itself, it was to be expected that the examination of the blood in various diseases would play an important part in the book. No details are given of methods preferred in this instance, as in so many others, but very delicately drawn charts are introduced into the text to illustrate the rise and fall of the red and white blood-corpuscles, and the variations in the amount of the hæmoglobin in different diseases. In fact, a word may be inserted here in praise of the different charts throughout the volume, and on the absence of those miserably-executed stock woodcuts of urinary crystals and tape-worm heads so often thrust in to disfigure text-books.

The volume commences at once with a consideration of the individual specific infectious diseases, and under this heading all forms of tuberculosis and syphilis are classed. This is only in accordance with modern ideas of the micro-organismal origin of those maladies, but it is somewhat novel and *bizarre* to find laryngeal and pulmonary phthisis grouped with zymotic bed-fellows. The term phthisis is held to include the following processes :—1. Tuberculo-pneumonic; 2. Chronic ulcerative; 3. Fibroid. The first of these classes may be subdivided into the pneumonic—similar to simple lobar pneumonia with the presence of tubercle bacilli—and the broncho-pneumonic types: the broncho-pneumonic variety being the commoner, and occurring very frequently after attacks of measles or whooping-cough.

Dr Osler insists very strongly on the importance of examining the suprascapular area in the back of the chest-wall, even before the corresponding region in front, in all doubtful cases of lung disease. Of course, he emphasizes the propriety of examining for tubercle bacilli on every possible occasion. He does not seem to use a double stain for this purpose.

In the treatment of typhoid, typhus, and cerebro-spinal fevers hydrotherapy is much lauded, while the antiseptic treatment is dismissed in a few words as being of little use.

In the part devoted to the group of constitutional diseases the opinions expressed on the rheumatic diseases are worth noting. For instance, the salicylates are said to have no control over the temperature in acute articular rheumatism, but to quickly relieve the pain. It seems to us that relief of the second often implies a consequent control of the first. The application of Paquelin's cautery is very strongly recommended for use over and round the affected joints. The distinction between chronic articular rheumatism and arthritis deformans, due to debility, anæmia, struma, etc., so strenuously insisted on by Lane of Bath, is clearly put.

Of the section devoted to consideration of gastro-intestinal disorders little need be said. Boiled milk and albumen water is the diet recommended in many of the dyspepsias. Like most Americans, the author does not allow of the existence of both typhlitis and perityphlitis, and regards most of such cases as due to appendicitis. Contrary to some general ideas, he has not found many foreign bodies in the appendix. On one occasion, however, he discovered eight snipe shot, and on another five apple pips. The large doses of olive oil recommended for gall-stones have proved in his hands, as we should have expected, useless.

In consideration of the cardiac murmurs, stress is laid on the frequency of murmurs unassociated with valvular disease. The description of the murmur of mitral stenosis is, to our mind, insufficient, no note being made of the murmur called sometimes, but erroneously, the post-diastolic.

In discussing the symptoms of thoracic aneurism—a discussion which is clearly and fully put—the absence of the pulse-wave in the abdominal aorta and its branches is commented on, the diagnostic value of tracheal tugging alluded to, but, strangely enough, the characteristic "gander cough" is passed over.

The subject of arterio-sclerosis is entered on more fully than usual, and three forms described, following Councilman's division; these are the nodular, the senile, and the diffuse forms. It would take up too much space to give further particulars.

For the same reason we must not consider more closely the remaining part of the volume; it is very similar to what has gone before. The book as a whole is remarkable in that it includes all the most modern theories of disease and results of recent methods. On reading it over it seems that it might, almost all of it, have been written within the last month or two. Of large, clear type, it is well printed; but the proof-reading might have been a little more carefully attended to, as there are several ludicrous and obvious errors.

To conclude, we have the greatest pleasure in recommending this volume to our readers as a book full of information with regard to the clinical aspect of disease, though for students it perhaps is somewhat too deep, and not sufficiently full as regards explanatory description.

Studien zur Physiologie und Pathologie des Blutes und der Lymphe. Von Dr M. Löwit, o.ö., Professor der Allegemeinen und Experimentallen Pathologie in Innsbruck. Jena: Gustav Fischer: 1892.

These researches by Professor Löwit contain much which is of great interest and importance; and despite the fact that they are recounted in the somewhat diffuse style so characteristic of German scientific writers, they are well worth the study of British physicians. It is impossible, in the space at our disposal, to do more than indicate the scope of the work, and some of the general results arrived at.

While in the case of the red blood-corpuscles the influence of various factors upon their number and upon their production and disintegration has been studied by many investigators, these questions in connexion with the no less important white corpuscles have received but scanty attention. In the present work the various conditions influencing these are considered in the light of experimental research. For these investigations rabbits were used, because of the difficulty of procuring a sufficient supply of dogs in Innsbruck.

In an early part of the work Dr Löwit deals with the normal number of white corpuscles, and with the normal proportion between the typical so-called multinucleated leucocyte of the blood and the uninucleated or spherically nucleated lymphocytes, which he justly considers as the young blood leucocytes just arrived from the lymph tissue in which they have developed.

He next shows that when a rabbit is fastened down a fall in the number of leucocytes takes place—a leucopenia is produced. This is accompanied by a fall in the proportion of uninucleated corpuscles, and hence is due to a diminished supply of these to the blood from the lymph-forming tissues. This leucopenia appears to be due to the fall of temperature which occurs in rabbits when tied down, and it may be produced by simply cooling the animals.

He next considers the dissolution of leucocytes, and shows that a number of different substances injected into the blood causes a fall in the number of leucocytes,—*i.e.*, produce a "leucolysis." Among these substances are pepsin, peptones, albumoses, nuclein, leech extract, and the proteins produced by bacteria. Curare, urea, and uric acid also act slightly in this way. In this process it is the old multinucleated leucocytes which suffer.

This leucolysis is accompanied by an increased production of leucocytes in the lymph tissue and an increased passage of these into the blood, so that following the initial fall there is a rise in the number of white corpuscles, and the proportion of young uninucleated cells is raised. This *leucocytosis* seems to be simply due to the fall in the number of leucocytes, and not to the stimulating action of some products of their disintegration, because it occurs after the leucopenia of cooling as well as after leucolysis.

The author next considers, in the light of these observations, the increased production of leucocytes in various conditions,—*e.g.*, after hæmorrhage, in inflammation, during digestion, in hydræmia, etc. As to how new leucocytes are formed, Löwit maintains that they may be formed by direct division without mitosis. These views he supports by a lengthy consideration of the condition of the leucocytes during active leucocytosis.

Next, after a long *résumé* of the theories of coagulation, he considers the question, and comes to the conclusion that the leucocytes play an important part in the production of a fibrin ferment.

In regard to the relationship of blood platelets to the other corpuscular elements of the blood, he believes that these—which disappear after the injection of leech extract—reappear in the blood after it is shed, and he therefore does not think they are to be regarded as true "corpuscles."

In the last section of the work the relationship of leucolysis to lymph formation is discussed. His *leucolytics* are the same as Heidenhain's *lymphagogues.* When the leucocytes of the blood are diminished, neuclein alone acts as readily as a lymphagogue as when the leucocytes are abundant, and he therefore believes that the lymphagogue action is to be ascribed to their leucolytic action setting free nuclein which increases lymph flow.

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1. *Researches in Female Pelvic Anatomy.* By J. CLARENCE WEBSTER, B.A., M.D., M.R.C.P.E. Edinburgh and London: Young J. Pentland: 1892.

2. *Tubo-Peritoneal Ectopic Gestation.* By J. CLARENCE WEBSTER, B.A., M.D., M.R.C.P.E. Edinburgh and London: Young J. Pentland: 1892.

1. DR J. C. WEBSTER'S *Researches in Female Pelvic Anatomy* is a scientific work of a high order of merit. It consists of three parts. The first contains an account of the sectional appearances of six specimens of the pelvis and its contents from patients who died during the puerperium, and is illustrated by a beautiful series of coloured plates, most of which are reduced by one-third from the natural size; the second is a monograph upon the female pelvic floor, in which the results of the study of the floor by dissection and frozen section are detailed, and the relations of that structure to

pregnancy, labour, and prolapsis uteri studied; and the third part is devoted to the investigation of the pelvis in a case in which a woman at the fifth month of pregnancy died nine days after the removal of a dermoid tumour of the left ovary.

The great value of the work consists in the minute and accurate descriptions of the relations of the various soft structures to the pelvic walls, and in the deductions bearing upon the regional anatomy of the puerperium which are drawn from these. Thus, in the *résumé* appended to the first part Dr Webster states that at the beginning of the puerperium the highest part of the uterus lies about 4¾ in. above the top of the symphysis; that the uterus is anteverted, or, it may be, anteflexed; that the lower uterine segment still exists, although it is much shorter than during labour; that the cervix has its cavity partly everted; and that the resistant ring, regarded by some authors as the os internum, is really the lower edge of the retraction ring. Such are some of the important conclusions at which the author arrives; with regard to the others, including those concerning the position of the bladder, the Credé method of expelling the placenta, and post-partum shock, we must refer all earnest workers in this field of research to the book itself. It may, however, be said that Dr Webster finds nothing to support the statement of Halliday Croom that after labour the bladder is on a higher level than during pregnancy, and that he differs from Haig Ferguson with regard to the cause of post-partum shock.

The second part of the work, that dealing with the pelvic floor, is, unlike the first, in a great degree controversial. It is somewhat startling to find that the author's views as to the structure of the floor and its behaviour in labour and prolapsus uteri are different from those enunciated several years ago by Berry Hart, and that they disagree also with those more recently brought forward by Symington. Nevertheless the conclusions at which he arrives seem in most instances warranted by the facts which he has elicited by means of dissectional as well as sectional methods. Probably it is more rational to look upon the bladder and uterus as constituent parts of the pelvic floor than to regard them as structures lying upon it. Further, it must be admitted that the loose connexion of the pubic segment, so greatly emphasized by Hart, only appears in sagittal sections of the pelvis, and does not really exist. There can be little doubt also in the mind of any one who has carefully watched a prolapsus case, that the mode of production described by Hart, whilst it is common, is by no means invariable. At the same time, we feel very strongly that Dr Webster has in some measure underrated the great service rendered by Hart's method of regarding the pelvic floor, artificial though it may to some extent be; for it has enabled accoucheurs all over the world to obtain a clear and in the main a correct conception of the mechanism of labour and of prolapsus uteri, and has greatly added to the reputation of the Edinburgh School of obstetricians. It is hypercritical, perhaps, to touch upon this point, but Dr Webster is at times somewhat intolerant with regard to the views of others; and whilst he is at pains to point out the fallacies of the sectional method, he at the same time bases his conclusions with regard to the anatomy of the puerperal pelvis mainly upon this very means of investigation. This is, however, but a slight defect in a work otherwise most admirable.

2. In his second book Dr Webster describes with great fulness of detail a case of ectopic pregnancy to which he applies the name "tubo-peritoneal," for the gestation-sac lay partly within the tube and partly in the peritoneal cavity. The possibility of the occurrence of this variety was referred to by Küstner in 1889; but no case previous to that recorded by Dr Webster is on record, and it is matter for congratulation that the specimen fell into the hands of one so well able to do justice to it. The investigation was carried out chiefly by the frozen sectional method, but dissection was also employed, and the microscopic examination of most of the structures involved was not neglected. The patient was operated upon by Dr Halliday Croom, and the fœtus was removed, but the other parts were left undisturbed; and after the woman's death (about thirty-one hours subsequent to the operation) the abdomen and pelvis were placed in the freezing mixture. This surgical interference must be borne in mind, for some of the conditions found were evidently due to post-operation changes. It is impossible here to give even a summary of the interesting clinical and pathological details found in this unique case—all scientific obstetricians will, doubtless, not fail to make themselves acquainted with them—but it may be said that Dr Webster has succeeded in giving a graphic, accurate, and exhaustive description of them, and has not omitted to discuss many of the more important questions connected with extra-uterine pregnancy in general. The plates illustrating this book are, like those in the previous work, beautifully executed, and both volumes reflect great credit upon the publisher. We believe that it was for part of the work contained in these two books that the author was awarded a gold medal by the University of Edinburgh, although he himself modestly says nothing of the fact. They will do much to sustain the already high reputation of Scottish obstetrics.

The Operative Treatment of Enlargement of the Prostate. By C. W. MANSELL MOULLIN. London: John Bale & Sons.

THIS small volume contains three lectures, the first dealing with the anatomy and physiology of the prostate, the true nature of the overgrowths, and the mechanism of its results; the second with palliative operations and perineal operations; and the third with suprapubic prostatectomy and general conclusions as to the indications for operation and the benefits to be derived therefrom.

There is not much that is new in the lectures, but the subject is lucidly and vigorously dealt with. The author insists on the necessity for examination of the early stages of the disease, in order to arrive at true conclusions as to the nature of the overgrowths, which he, like previous observers, believes to begin in the glandular parts.

In his opinion the enlargement frequently occurs in those who do not deserve to be called old.

Speaking of the suprapubic operation, Mansell Moullin supports the recommendation of other surgeons that the prostatic urethra must in every case be fully explored, and if not perfectly soft and non-resistant, should be deeply incised posteriorly (as Trendelenburg, Helferich, Kümmell, and others advise), or (as Belfield prefers) a perineal incision should be made, and exploration thus rendered more complete; this secondary incision he considers of great assistance as regards drainage.

The author concludes that the whole obstruction can be removed by the operation, that recurrence is not greatly to be feared, and that after operation the bladder has a fair chance of regaining its power.

At the same time he emphasizes the opinion that enlargement *per se* is not an indication for operation, it is when complications arise injurious to general health that the propriety of prostatectomy or other operation must be considered. As to which operation is to be chosen, one must be guided by the stage of the disease. If the local condition is manifestly getting worse, but the patient's constitution is still sound, suprapubic prostatectomy affords relief and prospect of permanent cure; if, on the other hand, this chance be lost, if bladder atony or kidney disease exists in a marked degree, palliative treatment by simple drainage is to be preferred.

The subject is illustrated by three plates, and by statistical tables, showing the results of the various modes of operative treatment.

Age of the Domestic Animals: being a Complete Treatise on the Dentition and other means of Determining the Age of these Animals. By RUSH SHIPPEN HUIDEKOPER, M.D. 8vo. Philadelphia and London: F. A. Davis: 1891.

THIS work has been before us for a considerable time, but we have now much pleasure in recording a favourable opinion upon its merits. Among others who will find such a treatise serviceable are members of the medical profession. In large towns and cities any risk or want of confidence in the purchase of horses can generally be met by the facilities afforded for hiring. Elsewhere it is somewhat different; and although most men privately cherish the conviction of possessing a considerable knowledge of horse flesh, their notions when practically tested are occasionally found to be rather vague and deficient in detail. The author in his preface is somewhat down upon the veterinarians of the old country. "Upon the age of domestic animals," he says, "there exist in English but incomplete and scattered writings; the best of them by writers of the first half of the century, which have only been supplemented in later years by short compends, or publication of charts of variable merit, with but a small amount of descriptive matter." Had this opinion not come across the pond it would have been rather "chawing up to the Britishers." And in one hoping "to furnish to students and veterinarians knowledge which will aid in surgical operations on the mouth," a larger acquaintance than is here implied might have been expected with what has been done, not only in England but in each of the three kingdoms, in these respects, and that not in the first only, but in the last half as well, of the century.

A great amount of useful reading will, notwithstanding, be found in these pages, especially in reference to the horse; while the very numerous and artistic illustrations go a long way in supplementing any little want of perspicuity which now and then betrays itself. In histology and development some remarks are not quite up to date, but the rapid and incessant influx of new ideas following in the wake of modern physiological research may reasonably account for this.

Among other interesting topics touched upon is the curious fact of the sympathetic relationship existing, both in the human subject and the lower animals, between certain uterine conditions and various dental affections. Besides other causes retarding or hastening the eruption of the permanent teeth, the observations of Traeger, the veterinarian of Doehlen, are noticed. Indeed, it seems strange that the diminished wearing down of the teeth during pregnancy in the mare, and the retarded eruption of some of the permanent set during gestation in the young animal, have not been thought matters of sufficient interest to suggest further investigation than has been accorded them. Again, in alluding to prognathism and brachygnathism—deformities equally perplexing to explain in the human subject—a clear enough description of the condition is given, but it would have been rendered still more valuable had some theory or explanation been submitted as accounting for this unsightly malformation in the horse, towards elucidating the question whether it may be accidental and acquired, or, on the other hand, developmental and hereditary.

Among other domestic animals the question of age and its indications is not so generally important as in the horse. Dentition in the ox is consequently not so much studied. A year or two's difference of age at certain periods of this animal's life, however, renders it desirable that some characteristics of a reliable nature in this direction should exist. And in such animals these are found not in the teeth alone, but in them conjointly with the horns,—the indications in this way afforded at certain periods of the animal's life being unmistakable. There is one case, however, in which this double caution cannot be made available, and that is in the hornless breed of cattle supposed to be originally peculiar to North Britain, and the remains of which are apparently not found in any prehistoric deposits—that is the Angus breed. This absence of horns appears to be a natural and characteristic conformation, and does not seem capable of being produced as a hereditary result of polling, as that has been practised by the Hindoos for upwards of 2000 years without any such consequences. Perhaps it is chiefly between the years of 4 and 10 that the horns are most valuable as a guide in the determination of age in cattle. Before that time the teeth, and after 10 years old the teeth and horns together, may be considered as the best index,—the rings or grooves upon the horns being the means afforded for such calculation. Sheep and goats, although of still less practical importance in such a discussion, are dealt with by the author, and with a brief account of dentition and the dental affections of the dog, with the indications thus afforded, as well as a *résumé* of the principal characters and peculiarities of the teeth in man, the treatise comes to a conclusion. The book is one which is certainly interesting and ought to be useful, and as such we commend it to all who are interested in these matters.

A Manual of the Dental Laboratory—its Construction, Management, and Economy; with Laboratory Notes and Suggestions. By CHARLES HUNTER. London: Baillière, Tindall, & Cox: 1892.

THE main purpose of this little work, says the author, is to present to the reader the results of a considerable experience in the methods and intricacies of dental laboratory practice; and in this he has been successful. In its pages will be found much that is useful as a guide for arranging the workshop and its fittings, for working and keeping its machinery in order, and for its general internal economy and management, in such matters as the value of apportioning time, the importance of orderliness, and the avoidance of waste. The appendix and laboratory notes will also be found serviceable, as containing much that applies in dental mechanics, or what the author more loftily designates "prosthetic purposes." Altogether there is a great deal of good sense in the book, and a copy of it would be an acquisition in any dental workroom. The letterpress is accompanied by a number of excellent illustrations.

The Value of Hypnotism in Chronic Alcoholism. By C. LLOYD TUCKEY, M.D. London: J. & A. Churchill: 1892.

THIS brochure is mainly a reproduction of a paper read before the British Medical Association at its annual meeting at Nottingham in 1892. It gives the author's latest results in the treatment of a condition which often enough baffles the skill and resources of the physician. We would recommend our readers to pay some attention to this little book. Hypnotism has now been recognised as of some value by the Committee appointed by the British Medical Association, and it behoves every physician to have at least some knowledge of the subject. At present the knowledge is so superficial, that we heard of a well-known physician quite recently recommending a layman to have a few lessons in the art, with a view to treating his wife, who is suffering from varied morbid fancies and delusions. Hypnotism is an edged tool, and needs a trained workman to use it; but at the same time we cordially agree with Dr Tuckey when he says that he is opposed to the addition of hypnotism to the already over-crowded lists of specialities; it should only be regarded as a therapeutic agent of great efficiency.

Dr Tuckey gives details of 31 consecutive cases of chronic alcoholism which he has treated systematically by hypnotism during three years; and, whilst the results he has obtained cannot be described as phenomenal, they yet show, we think, decidedly that the treatment has been of value where all else has failed. It is important to remember that casual hypnotization is generally useless. If the treatment is to be successful, it must be carried out systematically, although we do know of cases in which two or three sittings have been remarkably successful in long-standing cases. We think Dr Tuckey is quite justified in writing the following sentences:—"I for one regard hypnotism as such a serious thing, that I think it ought to be surrounded with as many safeguards as the administration of anæsthetics. It would certainly be safer for a very susceptible subject to take chloroform from the hands of a stranger than to allow him to induce hypnosis. He would at least know in the one case the limit of his danger, whereas in the other the limit would depend upon the extent of his susceptibility to post-hypnotic suggestion."

Aix-la-Chapelle (Aachen) as a Health Resort. Translated by JAMES DONELAN, M.B., C.M. London: J. & A. Churchill: 1892.

THIS book, which is divided into two parts, is very different from the usual productions sent out from health resorts. It is written by eight doctors practising at Aix-la-Chapelle; and after detailing the history of the baths, their geographical position, their applications and physiological effects, seven monographs are provided, all of great interest. Usually the books on health resorts are written by one man, but in this case each apparently takes his speciality, and the result is a collection of papers which, apart from their reference to the baths and water, are valuable in other ways.

Dr Mayer writes on gout and on tabes dorsalis, Dr Rademaker on arthritis deformans, Dr Beissel on diseases of the skin, Dr Schuhmacher on injuries and their consequences, chronic catarrh of the digestive tract, chronic catarrh of the pharynx, larynx, and bronchi, chronic metallic poisoning, and a joint article on syphilis with Dr Brandis, who also contributes an article on chronic rheumatic arthritis. Dr Thissen deals with syphilitic diseases of the internal organs, and Dr Alexander with diseases of the eye. The articles are all well written; and Dr Donelan may be congratulated upon his translation. The book should find a place in every physician's library.

The Climate of Rome and of Roman Malaria. By Professor TOMMASI-CRUDELLI. Translated by CHARLES CRAMOND DICK. London: J. & A. Churchill: 1892.

IN the year 1885 Professor Corrado Tommasi-Crudelli delivered a course of lectures at the inauguration of the Institute of Hygiene attached to the University of Rome. These were afterwards collected and published by him under the title of *Il Clima di Roma.* The present is a translation of that work, which has been revised and corrected up to date by Professor Tommasi-Crudelli himself. The translator has done his work exceedingly well.

All who are interested in the subject of malaria and its prevention will do well to read this book, because, apart from the general interest respecting Rome and Agro Romano itself, there is an interesting chapter on the Preservation of Human Life in Malarious Countries, and to this chapter alone we have space to refer. The author takes his stand upon the usually acknowledged fact, that a malarious poison *sui generis* exists, and he scouts the idea of such things as chills, or what he calls "rheumatising action," having anything to do with the production of the disease. He also maintains, and very properly, that once a person has been exposed to the malarial poison he will in most cases be liable to a recurrence of the paroxysm during the whole of his natural life. This being the case, our author does not believe that vaccination will ever be employed to counteract malaria. This we doubt; still, so far little has been done in preparing an anti-malarial vaccine. Good advice is given as to the precautions to be taken by those living in malarious regions; special attention is directed to avoiding exposure at the time of the rising or the setting of the sun, also to the advantage of sleeping as high as possible from the ground. A point of interest and importance which we do not remember to have seen mentioned before, or at any rate not in such detail, is that the author recommends the greatest care to be taken in ventilating the sleeping apartments. He advises houses to be built in the form of a hollow square, with a central courtyard carefully paved. He would have the houses so constructed that when the doors are shut no air should obtain access to them save from the central square,—that is to say, that no windows should be made in external walls, or only in the highest storey, immediately under the roof, when the houses are very high. Plants should not be kept in houses, save, perhaps, in drawing-rooms, but it is highly necessary in such cases that the greatest attention should be paid to the ventilation of the rooms in which they are kept, in order to guard against any possible accumulation of the malaria ferment in the air of such confined spaces. The author recommends respirators to be worn when exposure to the night air is necessary. He strongly advises the maintenance of the action of the circulatory system by good nourishment and by a moderate use of wines and spirits, and the avoidance of chill by the employment of suitable clothing. With regard to prophylactic medicine, he thinks that quinine is too dear, the salicylates too dear and too uncertain in action, and the alcoholic tincture of eucalyptus unsatisfactory, except as a preservative against slight attacks of malaria. He has, however, largely experimented with the administration of arsenious acid, and finds that it is admirable. He administers it in the form of patent gelatines. These are soft tablets of gelatine which contain a decigramme of arsenic equally distributed through every tablet, which is divided into 50 squares, each of which contains 2 milligrammes of arsenic. It appears, too, that Dr Leslie in the Congo Free State used these tabloids with advantage. The only other remedy or preventive for malaria which Tommasi-Crudelli employs is a decoction of the whole lemon fruit. This he finds admirable as well as cheap, and he has found in numerous instances that even where quinine and arsenic have failed in conquering chronic malaria, his "lemon squash" yields yeoman service.

With regard to acclimatization of a race in a malarious district, our author is not very sanguine. He considers that where a population has become acclimatized it may be considered as the result of natural selection by malaria through successive generations.

Health. The Voyage to South Africa and Sojourn there. London: 1891.

THIS is a useful little guide to South Africa. It is provided with a good map, and will be of use to physicians sending their patients to the Cape. We have tested the information and find it accurate, and South Africa as a health resort is not over praised.

Epidemic of Influenza (Report on, in New South Wales, 1891).

THIS is a careful report to the President of the Board of Health by Dr J. Ashburton Thompson, Chief Medical Inspector on the Influenza in New South Wales during 1891. The author has collected a mass of information from various observers in towns and country in reply to a series of carefully drawn-up queries.

Dr Thompson has come to the conclusion "that the most operations of the influenza bacillus in the body are carried on in the digestive canal," and that, with regard to treatment, "evacuation first, and then disinfection of the *primæ viæ;* of which the former was recognised as a mode of treatment successfully acted upon 150 years ago. But a condition attaches indispensably and obviously to this method; above all things treatment must speedily follow upon attack."

Elements of Pharmacy, Materia Medica, and Therapeutics. By WILLIAM WHITLA, M.D., Professor of Materia Medica and Therapeutics in Queen's College, Belfast, etc. Sixth Edition. London: Henry Renshaw: 1892.

WE had occasion previously to speak favourably of this book, and the fact that "the present edition completes an issue of 15,000 copies since 1882" shows that the work has a wide circulation. In many respects it is an excellent manual, but we would have expected that in a *sixth edition* more accuracy would have been paid to the proper classification of plants. The author does not state what authority he has followed in assigning plants to their "Natural Orders;" certainly it is not the best botanical authorities of the present day. Surely strophanthus should not be in Loganiaceæ. We could point out many similar errors into which the author has fallen by merely following in the lines of old classification which are now obsolete. It is a book which contains much valuable information, and very specially on drugs which are not officinal.

The Pharmacy and Poison Laws of the United Kingdom: Their History and Interpretation. With an Account of the Pharmacy Laws in force in Australasia, Canada, and Cape Colony. London and Melbourne: Office of the *Chemist and Druggist.*

THIS book is specially meant for candidates for the licentiateship of the Pharmaceutical societies. All their candidates require to pass an examination on these laws, and for all such this book will be invaluable. It will also be found useful to members of the medical profession, for whether they dispense their own medicines or not, they should be acquainted with the laws in force about the sale of poisons. We wish the book a wide circulation.

Catechism Series: Chemistry. Part II. *Organic and Inorganic.* Edinburgh: E. & S. Livingstone.

ON several occasions we have expressed our views regarding the utility of this *Catechism Series.* The student who trusts to them is sure to meet with disappointment, and this one is no exception to the general rule.

Pharmacopœia of the Royal Infirmary, Edinburgh. Compiled by CHARLES ARTHUR, Chemist to the Institution. Edinburgh: James Thin: 1892.

THIS work is very neatly got up, and will save much writing on the part of the medical and surgical staff. It also is interesting, as showing the substances most generally used in our great metropolitan Hospital.

The book could be improved in several particulars. At page 1 we find the word *sulphureti*, which is obsolete. There is no good reason for substituting *inhalatio* for the *vapor* of the B. P. We are sorry to see at page 26 a *lotio plumbicum opio* still in use. It is chemically a bad preparation. A far better combination is given at page 105 under the Lock department. A preparation of morphine instead of opium should always be used with lead solutions.

We always thought it was beneath the dignity of Fellows of our Edinburgh Colleges to prescribe Nisbet's specific or any other body's specific, and yet we find it at page 108.

The Doctor's Magazine. Vol. I., No. 9, December 1892. Bombay: K. Nadkaim, Manager and Proprietor.

THIS little magazine is accompanied by a prospectus of a new journal, which is to be published as a continuation of itself in January. We are thus reviewing the last number of this *Doctor's Magazine*, which, Phœnix-like, is to rise from its ashes this year, 1893, as the *Indian Medico-Chirurgical Review.* The defunct one contains one original article, some clinical notes, and about fifteen pages of extracts, of greater or less value, from other journals, illustrating the "Progress of Medical Science." We wish a long and prosperous career for its successor when it makes its appearance.

The Scalpel. A Monthly Magazine for Medical Students. Vol. I., No. 2, November 1892. Calcutta.

THIS is evidently written by students for students, and has much of the fervour of youth tempered with the wiles of the Orient. There are some most amusing advertisements in the text, which are quite childlike and bland. The cases are not worth much, but the attempt shows a spirit of enterprize and good fellowship deserving of all encouragement.

Part Third.

MEETINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION LIV.—MEETING II.

Wednesday, 14*th December* 1892.—Prof. A. R. SIMPSON, *President, in the Chair.*

I. *Dr R. Stewart* showed a specimen of DOUBLE MONSTER. The mother was a ii.-para, 28 years of age. Dr Stewart was able during the pregnancy to make out twins and a breech presentation. When called to confinement he found the os dilated; he ruptured membranes, and there descended two legs. No progress was made, and on examination he found both breeches descending, and of the protruded legs one belonged to each fœtus. He tried to push up one fœtus and to bring down the other, but in each case failed. He then pushed up both, and found the heads high up, and that the bodies could not be separated. The pelvis was long and narrow; the children were large. Experienced extreme difficulty in getting the parts sufficiently far down to decapitate. He was greatly indebted to Dr Underhill and Dr Playfair for valuable assistance.

II. *Dr J. Aitken Clark* exhibited a specimen of a portion of the LARGE INTESTINE of a child, five months old, which showed two intussusceptions. On post-mortem examination the first was found in the left hypochondrium, and was part of the transverse colon intussuscepted into the splenic flexure, and measured 3 inches. The second was an intussusception of part of the descending colon into the sigmoid flexure and upper part of rectum, and was lying in the left iliac fossa and upper part of pelvis, and measured 3½ inches. The chief symptom was hæmorrhage. On rectal examination a distinct tumour was felt, and on palpating the abdomen an elongated soft sausage-like swelling was felt in the left iliac fossa dipping into the pelvis. The tumour in the left hypochondrium was not made out. He suggested an operation, but the parents refused. Inversion and large and frequent oil enemata were tried, but all to no purpose, and the child died six days after he first saw it.

III. *Dr Brewis* exhibited—(1.) A TUBERCULAR KIDNEY which he had removed from a patient post-mortem. The patient was 22 years of age, and had suffered for a year from a swelling occupying the left half of the abdomen. The kidney presented the appearance of a multilocular sac filled with thick pus. The ureter was greatly thickened throughout and contained pus. The symptoms were pain, diarrhœa, and high temperature. The urine was very albuminous. The general condition of the patient prevented removal or drainage of the kidney, and it was well that no operative interference was attempted, as the other kidney was much enlarged, and was entirely waxy and fatty. The intestines were also affected with tubercular ulceration. (2.) A LARGE OVARIAN TUMOUR removed from a patient that day; also the OVARY of the opposite side, which was interesting as showing commencing degeneration of the Graafian follicles.

IV. *The President* exhibited—(1.) THE SECUNDINES from a case of twins. One of the twins had reached the full term of development, and was born alive. The other had died between the third and fourth month, and having undergone a marked degree of compression, presented the appearance of the *fœtus papyraceus.* (2.) AN OVARIAN TUMOUR removed nine days ago from a patient, who was making a satisfactory recovery. The case had been diagnosed as one of ovarian tumour, but the presence of a solid mass in the right iliac region was difficult of explanation. As the tumour was found to be fixed in the pelvis, it was supposed to be one of those cases where the tumour, growing down into the broad ligament, causes the uterus to rise up into the abdomen. When the abdominal wall was incised, the mass in the right iliac fossa was at once seen to be the uterus enlarged to the size of the fist by a fibroid tumour. The left Fallopian tube and broad ligament were seen stretching in front of the ovarian tumour to reach it in the left iliac region. As the finger could be passed between these structures and the surface of the tumour, a loop of thread was at once passed round and firmly tied, and a pair of compression forceps having been applied close to the tumour, the tissues were divided, and then clearly seen to be the entire pedicle of the tumour. It was not, however, immediately removable, as pretty extensive adhesions had formed between the surface of the tumour and the pelvic peritoneum, which caused considerable trouble in their separation. The adhesions had probably formed early in the history of development of the tumour, which had never given rise to any trouble until the growing size of the abdomen attracted her attention. (3.) A portion of a COLLOID OVARIAN TUMOUR from an elderly woman on whom he had performed ovariotomy three weeks previously, and who was slowly recovering. The patient had been in one of the surgical wards of the Infirmary, where she had been tapped under the belief that the case was one of ascites, but no fluid ran through the canula. When the abdomen was opened it was at once seen to be one of the cases described by Werth as pseudo-myxoma peritonei, where an ovarian cyst with colloid contents had burst and thrown its contents into the peritoneal cavity. In this instance the glutinous matter was diffused through the whole cavity and filled the pouch of a hernial sac. Masses of it had become adherent to the entire peritoneal surface, visceral and parietal, which had become vascular and inflamed so as to throw out proliferating vessels among the viscid masses, tending to their absorption. This process could be seen going on on the surface of the tumour itself on the portion exhibited. (4.) Another large OVARIAN TUMOUR, which had been sent to him by Dr Alwyn Raimes of York. It weighed (with the uterus) 31 lbs. It came from a woman, 61 years of age, whom he (Dr Raimes) had attended for three or four years. Latterly it had grown very rapidly, and had pushed the sternum outwards at right angles to the middle line. She had suffered from menorrhagia for a few years previously, but in the last two years this had been absent. The tumour had grown down into the broad ligament, and became intimately adherent to the back wall of the uterus, the cavity of which had become greatly elongated. Diagnosis during life would have been quite impossible, and any operation hopeless.

V. *Dr J. W. Ballantyne* read Studies in Fœtal Pathology and Teratology (Second series): 1. OMPHALO-ANGIOPAGOUS TWINS—Description of a Fœtus Paracephalus dipus acardiacus, which will appear in a future number of this Journal.

The President thought the Society were greatly indebted to Dr Ballantyne for the interesting and valuable paper he had just read. These studies in Teratology had already enriched their Transactions, and this new contribution would help greatly to clear up our ideas in this rather obscure department of obstetrical pathology. The classification which Dr Ballantyne had advocated might seem at first sight complicated; but on consideration it would be found to simplify the subject. It might be startling, as Dr Ballantyne had admitted, to enrol the well-formed twins developed from a single ovum among teratological subjects. But the recent observations of Rumpe justify this arrangement. Various considerations seemed to show that twinning generally was to be regarded as an abnormality in development. Sir Arthur Mitchell, *e.g.*, had many years ago collected a series of statistics which went to show that the mental developments of twins were below the average, and that there was a tendency amongst them to bodily deformities. These observations related to twins in general. But Rumpe's observations indicated that these pathological tendencies of mind and body were not manifested in the group of twins of binovular origin, but were more marked in the uniovular twins, which were specially liable to be produced by women at the commencement and towards the close of their reproductive career. The designation that Dr Ballantyne had applied to the monstrosity which he had so well described, though unfamiliar, indicated better than its old designation, acardiac monster, the mode of its production. Many years ago he had shown and described to the Society an excellent specimen of this variety of twin, and had shown that the explanation of Claudius best applied to the manner of its development. He had also shown another, which presented the appearance of the three legs seen on a Manx coin.

Dr J. Halliday Croom should like to add his testimony to the value of Dr Ballantyne's paper. The subject was one which did not lend itself readily to discussion, but Dr Ballantyne seemed to him to deserve the thanks of those who were teachers as having simplified the classification of monsters, and done good work in presenting a very difficult subject in a very clear manner. The tissue of which the thickened thighs was composed was apparently of the same tissue found in the acardiac fœtus, a specimen of which he had described and shown some years before. In the very careful description which Dr Ballantyne had given of his case, Dr Croom would like to inquire as to his explanation of the constriction round the abdomen separating the abdomen from the thorax.

Dr Ballantyne, in reply to a question by Dr Croom, said that the exact meaning of the constriction at the level of the umbilicus was difficult to arrive at. It seemed to him, however, that since there was no vertebral column, the shoulder and pelvic girdles were simply held together by the quantity of tissue sufficient to keep up a vascular connexion between the two parts of the fœtus.

VI. *Dr Ramsay Smith* read a note of a CASE OF BLEEDING FROM THE URACHUS BY WAY OF THE BLADDER, which will appear in a future number of this Journal.

Dr Ballantyne felt somewhat reluctant to accept the explanation of the origin of the blood given by Dr Ramsay Smith, but in the circumstances it was difficult to think of a more feasible one. He wondered whether there might not have occurred during labour some slight internal laceration, from which blood may have passed intermittently into the bladder or urethra. The case was quite unlike any that he had ever seen or read about, and he thought they were indebted to Dr Ramsay Smith for having put it upon record.

Dr Smith replied that there was nothing in the labour, nor were there any after-symptoms to suggest internal laceration, and that all the circumstances of the case pointed to the explanation he had given as being the only likely one.

VII. *Dr J. W. Martin* read a paper on a CASE OF PUERPERAL ECLAMPSIA, which will appear in a future number of this Journal.

VIII. *Dr Halliday Croom* read a paper on PREMATURE SEXUAL DEVELOPMENT IN RELATION SPECIALLY TO OVARIAN TUMOURS, WITH AN ILLUSTRATIVE CASE OF OVARIAN SARCOMA IN A CHILD OF SEVEN; LAPAROTOMY; RECOVERY, which appears at page 689.

The President said that Dr Croom's communication was instructive and interesting, both because of the history of this rare case which he had so successfully treated and so clearly recorded, and also because of the trouble he had taken in classifying the different conditions under which premature menstruation was met with, and citing illustrative cases. He (the President) had never met with any clear case of its occurrence, and was glad to have had the opportunity of hearing Dr Croom's valuable paper.

Dr Ballantyne commented on the extreme rarity and great interest of the case that had been so well placed before them by Dr Croom. He thought it would be interesting to know whether the boy who had connexion with the patient showed also any signs of premature sexual development and precocity. The medico-legal interest of the casewas not less than the obstetrical.

Dr Croom replied.

ROYAL MEDICAL SOCIETY.

Dec. 16, 1892.—Dr Fowler in the chair.

Mr D. A. Welsh brought two cases of Alopecia before the Society, and read a communication on the subject, which he classified and discussed under two heads, Clinical and Ætiological.

This was followed by a comprehensive paper by *Dr Giles*, on "Erysipelas and its General Treatment." He noted the great difference of opinion held on this disease even in the most remote times, differences which are not conclusively settled to this day, though opinions on the matter have gone through progressive changes. After mentioning the various kinds of erysipelas, he spoke of the essential cause, the predisposing causes, the symptoms and duration, and especially the treatment of cutaneous erysipelas distinguished as such from cellulo-cutaneous and cellular erysipelas by Nunneley. He expressed some doubt as to the beneficial effects obtained by the internal administration of iron.

Dr Miles continued the subject in a paper on the "Treatment of Erysipelas at its Spreading Margin," and the results of observations made by him on a large number of cases. The communication was of great practical interest, and is, we understand, to be soon printed in full in the Hospital Reports. Much discussion followed on these two papers.

Mr R. W. Briggs contributed an interesting dissertation on "The Function of the Thyroid Gland and its Relations to Disease." He dealt first with function, rapidly running over the many theories that have from time to time been held on this subject, and then passed on to pathology, and lastly to therapeutics, in so far as they are related to function. He contended that—(1), As regards the function of the thyroid gland, it secretes a substance of value to the system; (2), as regards its pathology, this secretion is diminished in myxœdema, but exaggerated and probably altered in exophthalmic goitre; and (3), that the good effects of the injection of thyroid juice, or ingestion of thyroid gland, or the engrafting of thyroid gland in myxœdema or cretinism, are due to the deficiency of this secretion being thus made up. Also, that it appears not unreasonable to suppose that the cures of exophthalmic goitre which have resulted after partial excision of the thyroid gland are due to the reduction of the amount of the secretion formed by the gland.

Jan. 6, 1893.—Dr Crerar in the chair.

Dr A. L. Gillespie gave a Demonstration on the Methods of Examination of the Contents of the Stomach, with special relation to their Acidity. After briefly describing how samples of the gastric contents were obtained, and the general points to be noted on naked-eye and microscopic examination, he proceeded to deal more particularly with their chemical relations. He stated that albumin combined with a definite quantity of hydrochloric acid, but in the presence of pepsin a greater quantity could be taken up, probably by the splitting up of the complex albumin molecule. This was supported by his observations on the various pure proteid bodies, each of which he found combined with a definite quantity of acid, and this quantity was greater in the lower proteids than in the higher. From these and similar considerations he hoped to obtain some idea of the nature of the proteid molecule. He then showed the method of estimating the total acidity of the gastric contents, and a simple method by which the free acid might be driven off when a repetition of the process gave the amount of combined acidity, the amount of free acid being calculated from the difference of these results. Clinically the amount of combined acid corresponded to the work done by the stomach on the last meal, while that of the free acid represented its potential energy. The methods of recognising the various fatty acids and their corresponding ethers was also shown, and the methods of estimating the absorbing power of the stomach described. The demonstration was a very instructive one, and was followed by some discussion, during which a wish was expressed that Dr Gillespie would give some information as to the clinical bearings of his subject. In reply to a question, Dr Gillespie stated that in testing the digestive power of the stomach, it was best, in his opinion, to do so after an ordinary meal; but when cancer was suspected, the examination might with advantage be repeated after a meal of starchy food.

Mr John Henderson then read notes of a case of Umbilical Hernia in a child, following an abscess of the abdominal wall. His remarks were illustrated by several excellent photographs, but his patient had unfortunately failed to keep the appointment. Some discussion followed, in which it was suggested that the abscess might have originated in connexion with some malformation of the urachus.

Jan. 13, 1893.—Dr Rainy in the chair.

Mr D. A. Welsh read a communication on the "Occurrence of Leucine and Tyrosine in the Urine of a Case of Renal Carcinoma." The history of the case commenced with acute rheumatism and alcoholism, but when first it came under observation the malignant growth was the dominant factor. During the week immediately preceding death, numerous crystals of leucine and tyrosine appeared in the urine. He endeavoured to prove that, since as a result of putrefactive decomposition alone, proteid bodies may give place to leucine and tyrosine, so the appearance of these crystals in the urine of this case marked the commencement of a putrefactive process in a mass of proteid tissue which to all intents and purposes was outside the patient's body. The paper was a scientific one, but unfortunately did not lead to any discussion.

Mr W. R. Martine laid before the meeting a very valuable collection of Ancient Bones which had been recently excavated. After giving a general account of the whole collection, he pointed out many noteworthy particulars regarding the age of the bones, their durability, and the traces of diseases found among them. Syphilis and rheumatism were easily recognised. The condition of many of the bones contradicted directly several of Casper's statements. The apparent differences might be accounted for by the preservative qualities of the dry sandy soil the bones were found in. They had been underground from 250 to 530 years. A large number of members took part in the very lively discussion which followed, archæological and historical as well as scientific points being brought up. The opinion was expressed that leprosy might be the cause of abnormal appearance of some of the bones. Much interest was shown in the unusual and most interesting subject which Mr Martine's enthusiastic energy had provided.

Mr Marsham M'Carthy spoke on the "Recurrence of Sensation after the Division of Nerves," and quoted four remarkable cases in which recurrence was extremely rapid. The most striking one was that of a young woman who cut her wrist, severing the radial and ulnar arteries, the median and ulnar nerves, and many of the tendons. There was such complete anæsthesia of the parts of the hand supplied by the nerves mentioned, that contact with a red-hot point was not felt. The ends were sutured, and immediately tickling was distinguished, and ten minutes later the application of a red-hot point produced very severe pain. Another which had come under his personal notice was that in which division of the median nerve had occurred, and perfect sensation returned the morning after suture. Some interesting discussion followed upon the methods by which sensory nerve communication is re-established in such cases.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

TENTH CASE OF TETANUS TREATED BY THE TIZZONI-CATTANI ANTITOXIN.—A tenth case of tetanus treated by the Tizzoni-

Cattani antitoxin is reported by Finotti (*Rif. Med.*, December 12, 1892). The patient, aged 19, was wounded by a splinter of wood in the neck on August 14th. A piece of this was withdrawn, and the wound closed. As it did not heal well, it was reopened a few days later, when a further splinter was discovered. On September 7th the patient complained of pain in the wound and in the lip. This led to a further examination and the discovery of yet another splinter. Two days later undoubted signs of tetanus supervened. The patient was admitted into hospital, and the wound in the neck excised and cauterized. Some of the secretion from the wound was used to inoculate animals, and produced in them undoubted tetanus. Cultures also revealed the characteristic bacillus. On September 12th one injection, and on the 13th two injections of 0·25 g. of antitoxin were given. On the 14th the patient felt somewhat better, and could open his mouth slightly. Another injection was given, but then the stock of antitoxin failed. For the next day the improvement was maintained, but all the trouble returned, and was even aggravated by the 20th, when a fresh supply of antitoxin arrived. Between the 20th and the 27th seven injections were given, and the patient steadily improved. On the latter day he could eat solid food, and got up for a time without ill effects. By October 3rd he was practically cured. Although the case was not an acute one, the author thinks it worthy of attention, because the patient entered the hospital with violent tetanic symptoms, which were partially relieved by injections of antitoxin. These symptoms, however, reappeared when the injections were discontinued, but a further course appeared to effect a complete cure. In this case the amount of urea excreted was increased both absolutely and relatively to uric acid.—*British Medical Journal*, January 1893.

COCAINE IN ACUTE INFLAMMATION OF THE EAR.—Wolfenstein (*N. Y. Med. Journ.*, November 5th) recommends more frequent applications of cocaine than is usually made. Since adopting this plan of treatment he has found that almost all his patients with acute otitis media recover without suppuration, while it formerly supervened in many cases. As soon as "earache" is complained of, he instils five to six drops of an 8 per cent. solution of hydrochlorate of cocaine into the ear, the head being bent towards the opposite side. The pain disappears in ten or fifteen minutes, and the instillation is repeated when it returns. Sometimes a single instillation aborts the attack, especially in those cases arising from bathing. Cases of acute otitis media generally require only two or three days, with four or five instillations daily. The pain and inflammation rapidly disappear, and the hearing is restored very quickly. In severe cases, where suppuration impends or has occurred, the solution must be used every hour or two till the pain ceases. In six cases of scarlatinal otitis the remedy was applied hourly till the pain ceased, and in all suppuration was avoided. He uses a 5 per cent.

solution (in very severe cases 8 to 10 per cent.) in distilled water, with a few grains of boric acid to each ounce. He has never seen the slightest toxic effect in these cases.—*British Medical Journal*, December 24, 1892.

PHENEUCALYPTOL.—J. Roussel (*La Médecine Hypodermique*, August 1892) calls attention to the above substance as the best combination for the administration of phenic acid. He employs pheneucalyptol, with good results, in the treatment of phthisis, even in the third stage of the disease. He first uses in these patients eucalyptol by itself, and, after one or two months, he injects the new combination for a period of two weeks. When adenitis, arthritis, or periostitis is present, the injections are applied interstitially. Phenic acid or pheneucalyptol is injected superficially, and often in solutions of the strength of twenty per cent. in cases of anthrax, pustules, epitheliomas, and tubercular lupus. These injections do not produce the violent effects caused by Roch's tuberculin. The writer recommends the following solutions:—(1.) Eucalyptol, 10 parts; phenic acid, 10; vegetable oil, 100. (2.) Eucalyptol, 15 parts; phenic acid, 15; vegetable oil, 100. (3.) Eucalyptol, 20 parts; phenic acid, 20; vegetable oil, 100. The injections made with solutions containing 10 and 20 per cent. of phenic acid are painless, and produce no local effects. The dose of such solutions may be put down as 1 cubic centimetre.—*Therapeutic Gazette*, December 1892.

TANNIN ENEMATA IN CHOLERA.—Dubner of Simbirsk (*Vratch*, No. 34, 1892) treats cholera mainly by Cautani's tannin enemata, repeating the injections four or six times. He begins with a solution at from 38° to 40° C., but as soon as improvement sets in he reduces the temperature down to 32° or even 28° C., because frequent hot injections are apt to give rise to abdominal pain and general weakness. Hot enemata are also contra-indicated by bloody stools. If restlessness or excitement is present, the author orders a warm bath with irrigations of the head. He systematically avoids any internal medication (including calomel, which occasionally causes intestinal hæmorrhage and cystitis). Narcotics he thinks worse than useless, since they are apt to inhibit the action of the gastric mucous membrane, and may even induce hiccough. Stimulants (camphor, musk, etc.) proved useless in his hands.—*British Medical Journal*, January 1893.

TREATMENT OF ALBUMINURIA BY THE SALTS OF STRONTIUM.—G. Sée has reported to the Académie de Médecine (*Bulletin de l'Académie de Médecine*, No. 32, August 15, 1892) the satisfactory results obtained in the treatment of a case of albuminuria by the salts of strontium. A young man, 20 years of age, who had been cured of pulmonary phthisis, exhibited, three weeks afterwards, an anasarca due to a parenchymatous nephritis. The patient passed daily two litres of urine charged with 23 grammes of albumin.

He was immediately placed under the alternate administration of strontium and calcium, in doses of from 4½ to 5 grammes a day. On the very first day after the beginning of this treatment, the quantity of albumen was reduced to 6 grammes per litre of urine, and after a few days to 1 gramme. Soon afterwards the albumen entirely disappeared, and the anasarca and the other symptoms of nephritis had diminished. In regard to diet, the patient was ordered the following:—1. Suppression of meat, eggs, especially those containing a large amount of albuminous material. 2. Macaroni, with very little cheese, but as much butter or other fatty substances as required. 3. An almost exclusively vegetarian regimen,—chocolate, potatoes, rice slightly cooked. 4. Sheep's brains and sweet bread, so rich in phosphorus. 5. Abstinence from wine or other alcoholic drinks, and even beer. (A small quantity of this beverage produced an increase in the amount of urine in the author's patient.) For drinking purposes, tea and mineral water.—*Therapeutic Gazette*, December 1892.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P. Ed., Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; late Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

Xanthoma Diabeticorum.—The occasional occurrence of a peculiar eruption of the skin in association with diabetes mellitus is now generally recognised by dermatologists, although there is still some difference of opinion as to its true nosological position. The extreme rarity of the affection is sufficiently shown by the scantiness of the literature relating thereto, only twelve cases having been recorded during the last thirty years. To these Malcolm Morris adds another, and at the same time prefaces his report with a summary of all those previously published. The appearances are in some respects different from those in ordinary xanthoma. Thus there are no nodules on the eyelids. The colour is often red, or with a reddish areola, assuming in time a reddish tint with a yellow centre. The nodules are firm. In one case of Barlow's, however, the colour of the skin was unchanged. The eruption gradually disappears. Jaundice is a frequent accompaniment of ordinary xanthoma in adults, while diabetes mellitus has never been regarded as occurring in connexion with it. Ordinary xanthoma (planum and multiplex) is slow in evolution, and generally permanent. Xanthoma diabeticorum appears suddenly, and may subside as suddenly. But anatomically an examination made of Mr Morris's case by Mr Jackson Clarke has shown that the three varieties are practically identical. A xanthoma nodule closely resembles a patch of atheroma: the whole process is inflammatory, the infiltration of the affected tissue with the characteristic cells, and the accumulation of the latter around the bloodvessels, and fatty infiltration and degeneration of the cells of the central part of the nodule. It is this which gives the characteristic deep-seated yellowish colour to the lesions, and hence it is clear that the colour is not an essential feature of the affection, as in certain stages of the process it may be altogether absent. To the thirteen cases related by Mr Morris, Dr Radcliffe Crocker adds a fourteenth, quite similar in its essential features, and comes to the same conclusion as to the inflammatory nature of the process. Both articles are fully illustrated by well-executed microscopical drawings.—*British Journal of Dermatology*, August 1892.

IMPRESSIONS OF SOME OF THE NEWER DRUGS IN DERMATOLOGICAL PRACTICE.—From an article by Dr Charles W. Allen we have extracted the following as the more interesting points: Naphthol in parasitic diseases, notably scabies, has an action uniformly favourable; this is increased when combined with sulphur. In pruritic affections, and in pruritus without lesions, it often cures the itching when other remedies have failed. He places reliance on a 10 per cent. solution in oil. It is also advantageous in some diseases of the scalp, as in pityriasis, seborrhœa, seborrhœic eczema, psoriasis, and alopecia. As an ointment it may be used thus: ℞ β naphthol, grs. xv.; Sulphuris præcip., grs. 20–40; Lanolini, ʒiij.; Vaselini, ad. ℥j. When employed for the scalp he uses—℞ β naphthol, ʒj.–ʒij.; Ol. ricini, ℥ss.; Ol. amygdal. amar., ♏j.; Ol. aurantii flor., ♏iv.; Sp. vini. rect., ℥iiss.—M. To be applied to the scalp once daily. He has used naphthol soap, 2½ per cent., with or without sulphur, often with decided benefit in acne, dry scaly conditions, pityriasis rosea, and pruritus. Oxyiodide of bismuth, prepared by fusing iodine with bismuth and boiling in water, is an insoluble, inodorous powder of a bright coppery-red colour. It has a special value in the treatment of ulcerative lesions. Thus he knows of no better powder for the treatment of ulcerating chancre; and it has given excellent results in balanitis, herpes progenitalis, condylomata, etc. Hydrogen dioxide is useful in removing discolorations produced by chrysarobin, pyrogallol, permanganate of potass, sulphur, and the aniline dyes used in dermatological practice. It is of great use in paronychia and other affections of the nails. Even in a case of psoriasis of the nail-bed it softened the thickened epithelium, and caused the psoriatic spots to vanish. In boils, abscesses, superficial and deep suppurating ulcers, moist secreting syphilitic patches, and in ulcers of the throat, it is of great service. Aristol and dermatol have proved useful cicatrizing agents, the former being the stronger. Stearates have recently been introduced to take the place of oleates. They are somewhat harder. That of zinc makes an adhesive powder, and in some eczemas appears to have a healing action. A solution of permanganate of potassium, of the strength of one grain in the ounce, is an excellent detergent wash in hyperidrosis pedum. Bassorin gum, water, glycerine, and dextrine, so mixed as to form a jelly-like mass, is a useful base wherewith to incorporate various medicinal agents.—*New York Medical Record*, July 23, 1892.

ELECTROLYSIS IN THE TREATMENT OF CUTANEOUS AFFECTIONS. —In the removal of hairs Dr Bowen never uses a current exceeding two milliampères, rarely more than one and a half. Though he considers a galvanometer useful, it is of trifling importance compared with the aptitude acquired by experience. He has tried a battery of high electro-motive force, with a strong resistance in the circuit, but has abandoned it. There is a certain amount of shock experienced by the patient, which is not felt when a small electromotive force is used, and he could not find any advantage in the greater steadiness of the current. He employs a copper electrode, covered with absorbent cotton. In the large majority of cases the hair may be destroyed without leaving the slightest evidence of the operation. It is better, provided the necessary patience is granted by the subject, to allow a larger number of hairs to return than is really necessary; for it is often difficult, even after much experience, to determine the exact moment when a given hair has been destroyed. It is better, therefore, to stop before that point has been reached, and to remove it at a subsequent sitting, than to run the risk of causing too much destruction of the tissues around. The hairs upon the neck are the hardest of all to remove, on account of the angle at which they are inserted, and thus there are more recurrences there. One must be cautious in replying to the inevitable question, How many sittings will be necessary? But it can be said decidedly that every hair can be thoroughly destroyed in the end, and that a successful result in every case is simply a matter of time and patience. In dilated and hypertrophied bloodvessels electrolysis is an agent of distinct importance. The spider nævi are readily and effectively cured by inserting a needle of a size suited to the individual lesion into the very centre of the growth, and allowing a current, usually somewhat stronger than that employed in hypertrichosis, to pass for a few seconds. A blanching of the dilated capillaries is immediately seen, beginning at the point where the needle has entered the skin, and extending peripherally until the minute radiating vessels have ceased to be apparent to the eye. In small angiomata, from the size of a pin's head to that of a small pea, a similar procedure is often effectual. If the lesion is raised above the level of the surrounding skin, it may be removed by passing the needle through its base in different places, allowing the current to pass but a short time at either insertion. In rosacea, while this method should not be exalted to the exclusion of others, it is a valuable aid. Cases of diffuse redness, where a few of the smaller vessels stand out prominently, are fairly amenable to treatment by its means. As a rule, the more prominent vessels may be made to vanish by inserting the needle in several parts of their course, and thus the affection be rendered less pronounced. When *moles* consist merely of a hypertrophy of pigment, they may be safely and neatly removed by touching them a number of times with a rather stout needle, connected with the negative pole of the battery, taking care to go no deeper than the part of the tissue which contains the pigment granules. A superficial crust will form, which is allowed to fall off spontaneously, leaving a smooth, almost normal surface. When there is an elevated lesion, as in the most disfiguring "moles," the base is transfixed in various diameters by a rather stout needle, using the utmost care not to include the normal tissue, nor inserting the needle deeper than is necessary. It is best not to attempt the removal of the whole excrescence at once, if the best results are desired, but just to stop short of what is deemed sufficient destruction. Freckles also may be caused to disappear by repeated superficial touching with the point of the needle. Dr Morton Prince has had a certain amount of success in treating small, superficial port-wine marks. He introduces an irido-platinum needle, connected with the positive pole, into the true skin parallel with the surface for the distance of one-half to one inch; the skin is "threaded" or skewered, as it were, by the needle. The negative pole is placed in the hand, and the current is then gradually turned on until from two to three milliampères are recorded. The skin over the needle must now be carefully watched. First a sharply-defined white line appears in its track, then in a few seconds little dark dots appear in this line; these coalesce, and the track becomes marked by a black line, due apparently to coagulated blood. At this point the process must be stopped. Similar lines are produced in the same way, parallel to the first, the intervening space being a multiple of the breadth of the lines, so as to avoid leaving streaks of discoloured skin. The succeeding operations between the previous ones must be done carefully, else ulceration and scarring result. A yellowish or whitish discoloration of the skin, less noticeable than the port-wine mark, is the final result.—*Boston Medical and Surgical Journal*, July 28, 1892.

TINEA VERSICOLOR.—De Molènes and Costilhes have specially investigated into the conditions of soil which favour the production of this disease, and think we must in some degree return to the views of ancient authors who attributed an important place to gastro-intestinal troubles. They have established the existence of such disturbances in the case of all those observed. The microsporon furfur being a parasite of an inferior order, a mouldiness in fact, finds in the acid and fatty condition of the skin, occasioned by profound disturbances of the digestive functions, a soil particularly suitable for its germination. These conditions are realized in those who wear under-vests of flannel, and who do not change these frequently. The flannel vest is not the medium of contagion, but one which promotes the occurrence of seborrhœa, and consequently the germination of the parasite. The parasite, which is found everywhere—in the skin, in the clothes, in the air—does not develop save when it finds the necessary conditions realized—dyspepsia and seborrhœa. This explains the relative frequency of the complaint, its resistance to treatment, and its proneness to relapse. To cure it the soil must receive attention as well as the parasite.—Abstract in *Annales de Dermatologie et de Syphiligraphie*, April 1892.

ACTINOMYCOSIS.—The following case, recorded by Thiriar, bears on the etiology of this obscure complaint:—A woman, aged 37, lived in a small village of Belgian Flanders, and had as her almost exclusive diet rye bread and potatoes with lard. Four months before she was seen an excoriation of the left malar region appeared, accompanied by very pronounced swelling and severe pain; the induration extended, and nodosities and ulcers appeared at three different points. These eventually developed a flat, though prominent livid tumour of the cheek. From fistulous openings there issued a thin, serous pus. The tumour was of unequal consistence, soft and semifluctuating in parts, harder at the periphery. She had lost three molar teeth on the left side of the upper jaw. At the site of the first bicuspid there was a granulation, through which a probe could be passed into the alveolus, which contained a fragment of the root; but there was no fistulous tract into the interior of the mouth. Yellow, roundish grains could be seen in the scrapings from the tumour, and these under the microscope were seen to be actinomyces. M. Thiriar cites some facts in connexion with actinomycosis, as observed in Belgium, both in animals and in man. He is of opinion that infection occurs by the mouth, and that a diet of rye has been the cause of its production. He recalls the fact that Johne has often found on the lips and tonsils of pigs, the husks of grasses of barley in particular covered with fungi, which had a strong resemblance to actinomyces.—Abstract in *Annales de Dermatologie et de Syphiligraphie*, April 1892.

MULTIPLE CYSTICERCUS OF THE SUBCUTANEOUS TISSUES.—Cysticerci are rarely met with in the skin, and thus a case of Dr Pye-Smith's has considerable interest: A well-built labourer, aged 30, had served six years in India and Burmah, having been discharged from the Army in 1891. He had a soft and white skin, and the numerous nodules scattered on the surface could be easily felt, and in a favourable light almost as readily seen. In June 1891, while in hospital with influenza, he noticed a small lump on his left arm, and since then others have appeared on the right, on the neck, shoulders, and face. No less than fifty were counted, from a pea to a marble in size. They lay in the connective tissue between the muscles of the arms and legs. They were painless, rounded, smooth, elastic, and slightly movable. Two were removed, and found to be cysts, and much smaller than they appeared to be *in situ;* and when opened, on a glass slide, a white object was seen, easily recognised as a cysticercus. He had left the East more than two years before the first nodule was noticed. He was in the habit of eating water-cress, not even washed, much less cooked, and this may explain the invasion of the parasite.—*British Journal of Dermatology*, November 1892.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—John Claudius Young, Allegany Co., New York, U.S.A., passed his final examination for the degree in Medicine in December last, and was admitted L.R.C.P. Ed.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—At the annual meeting of this Society, held in the Society's Rooms, 40 Leicester Square, London, on the 9th January, Mr W. Bowman MacLeod, of Edinburgh, was elected President for 1893-94. This is the first occasion on which a resident Scotch dentist has been elected to the Presidency of this Society.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS, ROME, 1893.—The President of the Provisional Committee of the 11th International Medical Congress, to be inaugurated in Rome on the 24th September 1893, has been asked by many pharmacians if they will be admitted to take part in the work of the Congress. We have been now informed by the President that, in consonance with articles 3 and 17 of the General Regulations, all pharmacians may be inscribed as members of the Congress, and that there is a special section directed by a Committee composed of the most distinguished Professors of Pharmacology.

THE NINTH BRESSA PRIZE.—The Royal Academy of Sciences of Turin, in accordance with the last will and testament of Dr Cesare Alessandro Bressa, and in conformity with the programme published 7th December 1876, announces that the term for competition for scientific works and discoveries made in the four previous years, 1889–92, to which only Italian authors and inventors were entitled, was closed on 31st December 1892. The Academy now gives notice that from the 1st of January 1891 the new term for competition for the ninth Bressa Prize has begun, to which, according to the testator's will, scientific men and inventors of all nations will be admitted. A prize will therefore be given to the scientific author or inventor, whatever be his nationality, who during the years 1891–94, "according to the judgment of the Royal Academy of Sciences of Turin, shall have made the most important and useful discovery, or published the most valuable work on physical and experimental Science, Natural History, Mathematics, Chemistry, Physiology and Pathology, as well as Geology, History, Geography and Statistics." The term will be closed at the end of December 1894. The sum fixed for the prize, deducting the income tax, will be of 10,416 francs (ten thousand four hundred and sixteen francs). The person who intends to compete must declare so, within the time above mentioned, by means of a letter accompanying the work, addressed to M. Lessona, President of the Academy. The work must be printed; manuscripts are considered as nothing. The works of the competitors which do not obtain the prize will be returned to them, when asked for within six months from the adjudication of the prize. None of the national members, resident or not resident, of the Turin Academy can obtain the prize. *The Academy gives the prize to the scientific man considered most worthy of it, even if he has not presented himself at the concourse.*

MR R. BOYLE sends us a copy of *A Sanitary Crusade through Eastern Australia*, and calls special attention to the spread of leprosy in Queensland, Cape Colony, and in Burmah. He has a theory that the practice of cannibalism has had in the past much to do with the propagation of this terrible scourge, the disease being spread wholesale through the eating of infected bodies. In New Caledonia and other of the South Sea Islands Mr Boyle has frequently seen different parts of human bodies hanging up in the natives' huts intended for future repasts, though then in an advanced stage of decomposition, and exhaling a sickening odour.

CORRIGENDA in Dr NAGEL'S paper, "Further Contributions to the Study of Version on One Leg," which appeared in the January number of this Journal.

Page 612, 19th line from foot—*for* "anterior" *read* "presenting."
" 9th " " *for* "dorso-anterior" *read* "dorso-posterior."
" 7th " " *for* "eventually" *read* "finally."
Page 616, 6th " " *for* "second" *read* "first."

From advance sheets stolen by a detective reporter for the daily press.

SURGERY IN THE FUTURE.

ADDRESS OF PROFESSOR PAUL PRY, JR., TO THE MEDICAL SOCIETY AT THE ANNUAL MEETING, JUNE 9, 1998.

GENTLEMEN,—I propose to bring to your notice to-day a remarkable result of the application of the principles of a scientific physiology to the development of the human race. But first I ask your indulgence for some brief introductory remarks.

You have all read that, in the latter portion of the nineteenth century, at and following the introduction of antiseptic and aseptic methods, the surgeons of that date exhibited great boldness and no little skill in opening the greater cavities of the body to enable them to treat directly the conditions of the internal organs.

And many here present must have personal recollection of the fact, that, at a later date, my honoured sire, noticing that his cures by abdominal section necessitated the reopening of the cavities at frequent intervals, conceived the brilliant idea of closing the wound of the original operation by buttons and buttonholes—thus affording the professional attendant an opportunity at any future date to inspect the condition of the organs without the delay and trouble of parietal section.

It is hard for us to-day to realize the boldness required for devising and executing what is to us an every-day matter. As an instance of his accurate judgment, I point with pride to the fact that no better substitute has been found for the decalcified bone buttons he used in his first case — and if the carbolized catgut loops which he then employed have been supplanted by the buttonholes worked by my patent buttonhole machine, such a trifling modified technique should in no way be allowed to detract from the credit due to him for this great advance in surgical science.

Nearly forty per cent. of our population, who can at present walk into their doctor's office, and by simply unbuttoning their bellies can get his advice upon the state of their livers or bowels, attest the immense value of the procedure due to his wise foresight and profound ability.

One remark of this able man not long before his lamentable decease was: "My son, in making a button-up belly I have but restored an original feature of the race. The umbilicus, that persists still upon the human abdomen, is still known to the vulgar as 'belly-button,' and is evidently a survival of the earlier row. Cannot this useful condition be restored by breeding and natural selection?"

Acting upon this hint I have long hoped to be able to follow up the investigation which he suggested.

Early this year, a young couple, about to be married, and who both required the removal of their appendices vermiformes, came to my clinic, and I performed laparotomy as usual. The cost of the operations proved a serious obstacle to their projected marriage, and gave me an unexpected opportunity. As the result of my proposals it was agreed between us that they should be married by an antiseptic clergyman and take up their residence in my suite of sterilized glass chambers—both to remain until conception was assured. After that was beyond doubt, the husband was allowed to go out and in under the strictest antiseptic precautions. Every possible care was taken to protect the lady from disturbing influences, and she remained in strict seclusion until confined.

A few days ago I had the pleasure of delivering her of a healthy, well-grown infant—female—which, to my great delight, presented in its anterior median line the artificially induced abdominal condition of the parents. From chin to labia majora a row of buttons and buttonholes extended. There was nothing remarkable about the labour except the fact that the infant was buttoned on to the placenta instead of being connected by a cord as usual. But as I fortunately had my belly-buttoner in my pocket, I had but little trouble from this source.

I am now about to present both the parents and child for your inspection; but ere I do so, I must state one most wonderful instance of the strength of maternal impressions. Carefully as I thought I had secluded the mother from external influences, I made one serious omission. Her meals were served by a thoroughly sterilized page, who wore the usual adornment of his class. To my astonishment and regret, the buttons of the infant, instead of being animal tissue, are of the shiniest brass. I will now, with your permission, introduce my friends, Mr and Mrs Grimes, and their infant.

Note 1.—President Paul Pry, sen., so affectionately spoken of by his eminent son in the above address, died at an advanced age some years since. The cause of death was heart-failure following an operation to replace his cirrhotic liver with one from a healthy pig. Weak as he was, he detected the fatal error of limiting the transfer to a single organ; and, as he died, grunted, "They should have gone the 'whole hog or none.'"

Note 2.—Mr Grimes, the father of the interesting infant whose genesis is stated above, is a lineal descendent of the Grimes who is the subject of a well-known poem of Albert G. Greene.—C. F. C.—*Boston Medical and Surgical Journal.*

OBITUARY.

THE REVEREND FRANCIS E. BELCOMBE, M.R.C.S.

All the profession in Edinburgh who had the pleasure of knowing the Reverend Mr Belcombe will learn with deep regret of his death at Clifton on the 7th of January. The immediate cause of his death was an attack of acute bronchitis, complicated with a weak heart. The youngest son of the late Dr Belcombe of York, he was born in that city in 1827. After a good preliminary education, he matriculated at the University of London in 1848, and in Edinburgh in 1850, taking his diploma of M.R.C.S. England in 1851. He soon turned his attention to the Church, and after studying at St Aidan's College, Birkenhead, he was ordained

Deacon in 1853 and Priest in 1854 by the Archbishop of York. After acting as Curate at Tadcaster for three years, he was Vicar of Whitley, in Cheshire, from 1857 to 1874. He then came to Edinburgh, and, residing at Merchiston, he began a service of the Episcopal Church in the hall at Merchiston Castle, kindly placed at his disposal by Dr Rogerson. Such was the energy, uniform courtesy, and kindness of his work there that he soon gathered around him an attached and zealous flock, and chiefly by his own exertions the fine buildings of Christ Church, Morningside, were erected. Of this he remained Incumbent till, from failing health and strength, he had to resign in 1885. He was then appointed Honorary Chaplain to the Cathedral. Though latterly he was not allowed, and, indeed, was not able, to take regular duty, his unfailing kindness and benevolence to the sick poor was still a pleasure to him and a comfort to many sick and suffering people. In 1890 he removed to Clifton in search of a better climate, having had several warnings that the keen air, even of Morningside, was too much for his weakened heart and lungs.

During his incumbency in Edinburgh Mr Belcombe's courtesy and friendliness made him a great favourite with all who knew him, and to the medical profession he always maintained an especially close and warm affection. His ministrations in the Infirmary and other charitable institutions were much appreciated. In the more intimate circle of friendship his fine presence, happy smile, and warm grasp of the hand will be much missed. Mr Belcombe was twice married,—first to Miss Frances Leigh of Belmont, in Cheshire, by whom he had two sons; and secondly to Miss Kate Dumbreck, a daughter of a late well-known and much-loved physician in Edinburgh, who, with one son, survives him.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—THE DISORDERS OF SPEECH.

By JOHN WYLLIE, M.D., F.R.C.P.E., Lecturer on Medicine in the Edinburgh School; one of the Ordinary Physicians to the Royal Infirmary, Edinburgh.

SPEECH IN ITS RELATIONS TO INSANITY—*Continued.*

(*Continued from p.* 715.)

REFLEX AND AUTOMATIC FORMS OF SPEECH, EXHIBITED BY INSANE PATIENTS.—(1.) *Echolalia.*—The simplest form of reflex speech is Echolalia. As we have already seen, echolalia is exhibited by all healthy children at a certain stage in the process of learning to speak. We have also seen that it is often retained permanently by such imbeciles as have never got beyond the first steps of that process. It consists simply in the echo-like repetition of words that have just been heard. They are mechanically repeated as sounds, without any attempt being made to attach meanings to them. Every parrot that speaks does so by echolalia. Only a few parrots of very superior intelligence (see Darwin and others) have apparently advanced a step further, so as to be able to attach the right meanings to a few of their words and expressions. Words and phrases learned by echolalia are repeated by a parrot automatically, when it is in lively humour.

If we wish to hear Echolalia practised by the insane, we must go to cases where the mind is decayed; in other words, we must go to cases of Dementia. In all forms of dementia, Echolalia is common. In my recent visits to the Royal Edinburgh Asylum, I found it typically exhibited by one of the patients who was the subject of adolescent dementia. I may refer again to the subject when I come to treat of the speech of dementia, and shall also have something to say about it in connexion with aphasia.

(2.) *Conventional Replies.*—A higher development of reflex speech is also often met with in cases of dementia,—especially, it would appear, in cases of senile dementia. It consists in the giving of Stereotyped or Conventional Replies to ordinary conventional questions. "How do you do?" says the questioner. "Quite well, thank you," says the answerer, though he may be very ill indeed. This is a sort of reply we all make sometimes, when we are absent-minded. The poor dement is always absent-minded; his mind is gone. Such conventional answers are so often repeated in the course of a lifetime that the speech-centres learn them by rote, and can repeat them automatically, if only the stimulus of the conventional question be supplied. Some would have us believe that the process is entirely reflex, and that the consciousness has nothing to do with this kind of speech in dements; but, for my own part, I am inclined to think that there must be a little mental consciousness in all these cases, roused into activity, perhaps, by the question; and some feeble glimmering of the meaning of the question, though the answer given may be so far from true. How low the consciousness may have sunk in some of the dements who exhibit this form of reflex speech is demonstrated by such a case as that recorded by Dr George M. Robertson, senior assistant in the Royal Edinburgh Asylum, in a paper which has attracted attention.[1] The patient was an old man with senile dementia, so mindless that he "was dirty in his habits, would not touch food if it was placed before him, never made a single request for food or anything else, and would not do the simplest thing that was asked him." When left to himself he was in the habit of talking to himself automatically, thus:—"If you would just come be—with the way—what now!—oh dear, dear! Oh, that is the whole closh—that's what! Oh dear, dear me—an it is the other macock or macockiness—See! Who is what?—that—is it? oh age." Yet this patient, when conventional questions were asked him, could answer them "reflexly" with some semblance of intelligence. Here is a bit of Dr Robertson's conversation with him:—

"It's a fine day, Ross." "It is that." "It's a wet morning" "Oh, no, not now." "It's a rainy day." "Yes, it is." "Ross!" "I hear, sir." "You're an old rascal." "Yes." "How are you this morning?" "Oh, very well, thank you."

(3.) *Other Forms of Automatic Speech.*—(*a.*) Patients who are the subject of advanced dementia are frequently occupied in talking to themselves, sometimes in a drawling monotone and sometimes in a whisper. The words of these Monologues are sometimes distinctly articulated, as in the specimen that has just been given. Often, in dementia of long standing, they have become for the most part merely semi-articulate sounds, that have only a superficial resemblance to words. But, whether they are composed for the most part of articulate words, or of mere sounds like words, it is impossible, as a rule, to detect any meaning in them. A little study of these monologues is apt to suggest to one's mind that the mental faculties of the patient have little or nothing to do with their production. It seems rather that, in these monologues, the organs of speech are taking exercise on their own account.

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[1] "Reflex Speech," *Journal of Mental Science*, April 1888.

(*b.*) In connexion with certain forms of Mania, with great volubility of incoherent speech, the question has of late years been debated, whether each incoherent fragment of a sentence represents an incoherent fragment of thought; or, if it is not rather the case that the speech-centres themselves participate in the general excitement of the brain, and display their excitement by pouring out automatically the words and phrases whose images are stored up within them. The term "Verbigeration" is now coming into use among alienists. It is a term meant to designate that noisy, incoherent, and meaningless speech so often met with in certain forms of mania. The term seems specially suitable for the speech of such cases when this is largely composed of the constant repetition of a very few words or phrases.

(*c.*) In the foregoing notes upon pyscho-motor word-hallucinations, as described by Séglas, it was indicated that such an hallucination, when very vivid, is apt to become an Impulsion, which compels the patient to exteriorize the hallucination by pronouncing the word. This again may perhaps be taken as an example of automatic action on the part of the speech organs. Some regard it as a kind of co-ordinate spasm in the motor word-centre, the motor disturbance resulting in the involuntary ejaculation of a word. The condition has by some authorities been termed Logospasmus Choreiformis; but when the words thus ejaculated are habitually of a dirty and disreputable character, the term Coprolalia is generally preferred. It is suggestive of the nature of the condition to find that, in coprolalia, a convulsive movement (spasmodic tic) of the arm or face is frequently associated with the ejaculation of the word. Professor Charcot, however, seems inclined to refer coprolalia to a deranged condition of those higher centres that are the organs of ideation, rather than to a mere local disturbance of the lower centre for speech production. I have already made a short reference to coprolalia in the second paper of this series (see *Edinburgh Medical Journal* for November 1891). It is worthy of remark that in some of these cases the patient is so much possessed and tormented by the word-hallucination, as to feel it as a "veritable foreign body loading his stomach," which he tries to expel by efforts of spitting.[1]

SUPERSTITIOUS SIGNIFICANCE ATTACHED TO WORDS BY SOME INSANE PATIENTS.—Everyone knows that among peoples who are savage, ignorant, and superstitious, words have often a mysterious and superstitious significance attached to them. Some are held to be lucky, and others unlucky; and forms of words, often meaningless in themselves, are used as spells, invocations, or incantations. One is therefore not surprised to find that similar superstitions abound among the Insane; who are held by some authorities to exhibit in some ways a kind of retrogression towards the savage state. Sometimes new words (neologisms) are invented by the insane, to give expression to the delusions which have taken possession of them. Lucky and unlucky words, spells and incantations, are also met with among them. Without going into further detail on this subject, I may quote the answer which a patient in the Royal Edinburgh Asylum gave us, a few weeks ago, when we asked him how long he had been in the Institution:—"By the time of *sane*, I have been here six years; by the time of *fuisographic*, I have been here ten years; fourteen years by what they call *penance*." He explained that "fuisographic" is "how your life is put together."

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[1] See Séglas, p. 163; also a paper by Charcot and Magnan, "De l'Onomatomanie" (*Arch. de Neurologie*, 1885).

AGONIZING SEARCH FOR A NAME, WORD, OR NUMBER THAT HAS BEEN FORGOTTEN.—Under the name Onomatomania (name- or word-madness), MM. Charcot and Magnan have, in a very important series of papers,[1] grouped together the phenomena connected with word-possession, word-impulsion, and superstitious interpretation of words, that we have just been examining. In the group they include also a form of Onomatomania that I have not yet alluded to. It is the form in which a person who has forgotten some name, word, or number, cannot prevent his mind from searching for the word in his memory, though the search becomes more and more painful, and even agonizing to him. In the agony of search he may become intensely excited, or even furious; be seized with a constrictive pain, and a sense of suffocation, about the chest, and break out into profuse perspiration. The symptoms are at once relieved if the word is at last remembered, or is communicated to the patient.

This condition is sometimes met with among those who are the subjects of pronounced insanity; it is common also among people who, owing to bad heredity, are on the verge of insanity. It is one of the *stigmata* by which an unstable mental equilibrium, due to bad heredity, may be recognised; being in that respect like the other eccentricities manifested by such individuals, such as the fear of pins, or of cats, or of thunder, perversions of the sexual instinct, dipsomania, etc. The authors of the papers have recorded several interesting cases.

EMBOLOLALIA.—This consists in the frequent interpolation into speech of a useless or meaningless word or syllable. Like "hemming and hawing," it is a phenomenon occasionally displayed by sane people. Kussmaul[2] has recorded a number of curious cases, among others that of an old general in whom this peculiarity made its appearance after a sunstroke. In his case the word interpolated was "mama." He said, for example, "This miserable—

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[1] "De l'Onomatomanie," *Archiv. de Neurologie*, tom. x., 1885, p. 157, also Nos. 70 and 71, 1892.

[2] *Op. cit.*, p. 813.

mama—fellow has expected—mama—other people to—mama—pick his chestnuts out of the fire—mama." Sometimes it is not a word that is interpolated, but a syllable, which is attached as an affix to other words.

Séglas (p. 63) states that these various forms of embololalia are met with occasionally among the Insane.

LOGORRHŒA AND BRADYLALIA.—I have already, in a former paper, made some reference to these two conditions of speech. Neither of them can be said to be unknown, or even very uncommon, among people who are not insane; but the best examples of both are probably met with among the insane. The "Verbigeration" of the maniac is a kind of logorrhœa; and the condition is typically presented by some garrulous and rapidly speaking Imbeciles. Bradylalia (slowness of utterance) is met with most frequently in connexion with conditions of depression. It is, as already indicated, common in cases of Melancholia with stupor.

FORMATION OF SENTENCES, AND ARTICULATION OF WORDS, IN INSANITY.—It has already been shown that in some forms of mania with exaltation and excitement the ideas may, for the individual, be unusually brilliant; and they may be expressed with unusual felicity of diction, and with perfect articulation. But such cases are somewhat exceptional, the more common characteristics being voluble incoherence and mere noise, with incomplete and often ungrammatical sentences. Sometimes, again, when excitement is not so great, and speech is more deliberate, there may still be defects in grammar (agrammatismus), which the patient did not exhibit when sane. He may return to a kind of baby-speech, and use *me* for *I*, convert the terminations of irregular verbs into those of regular ones, or use the verb only in the infinitive; or, like a child, he may speak of himself only in the third person; or, in obedience to some delusion about his personality, he may, in referring to himself, always use such an expression as "the person of me." Such errors in syntax and prosody are common enough.

As to Articulation, I think we may say that in the earlier and more active stages of insanity articulation of individual words is usually perfect. In chronic cases also it very often remains perfect throughout. Even when insanity sinks into partial dementia, there is often nothing special to remark about the articulation of the words, however barren of meaning the patient's use of them may be. In Advanced or almost Total Dementia, however, as already indicated, the maundering and mumbling Monologues in which the patient often indulges, besides being destitute of meaning, are often articulated in so slovenly and careless a manner that the individual words, if they are words at all, cannot for the most part be recognised as such. It is a careless and imperfect kind of speech that puts one in mind of the scamped articulation of lalling imbeciles. Yet if such a patient can be roused to reply to questions, the articulation of his replies may be normal, or almost so. There are, however, exceptions to this rule. In Senile Dementia there may be noticeable a paralytic slurring in the patient's replies; and in the dementia of General Paralysis of the Insane there are, along with this slurring, other peculiarities, which indicate that the motor apparatus of articulation is undergoing changes which are paralyzing both its motor power and its power of co-ordination. I shall have something to say about these paralytic peculiarities of speech in the next part of this paper. The existence of this paralytic element in the articulation is of grave significance prognostically.

THE WRITING OF THE INSANE.—This is a subject which has been treated of by Séglas and others at considerable length, and there are many points of interest in connexion with it. I can only afford, however, to make a very few notes about it. (1.) It will be readily understood that the incoherence, the verbigeration, and the delusions of the patient, are made quite as manifest in his writings as they are in his speech. Some of the insane (graphomaniacs) would write for ever, if allowed to do so; and a few, if not prevented, would have their writings printed for the information of the public. The Inventors would have their inventions made known for the sake of humanity, and the Persecuted would appeal to the public in print for succour from their tormentors. (2.) All kinds of fantastical peculiarities are met with in the Handwriting of letters written by some of the insane. The *t*'s may be doubly barred, the *i*'s doubly dotted. Punctuation may be wholly absent, or practised in excess; the words may be underlined or doubly underlined to a most unusual extent; and capitals may be used in unnatural profusion. (3.) A paretic or paralytic element may be betrayed in the tremulousness of the handwriting. This may be due to functional debility, as in the handwriting of some melancholics, and of some hysterics; but it may also be due to organic changes in the motor centres for writing, as in the tremulous writing of many cases of senile dementia, and in the still more tremulous and disorderly writing of patients suffering from general paralysis of the insane. In the latter condition the characters may be converted into irregular zigzags, and so crowded together as to be totally illegible.

APHASIA AMONG THE INSANE.—This is a subject which I propose to defer the consideration of until I have discussed the subject of aphasia as produced by coarse organic lesions of the brain. I shall here only say that aphasia, in all its forms, is of not uncommon occurrence among the insane. In some cases it is a functional and temporary complication of the insanity. In other cases a gross lesion of the brain has caused the aphasia, and, it may be, has also led to the development of the insanity.

Speech in Dementia.

Permanent injury of the mind is a common result of an attack of insanity. In not a few cases the damage amounts to total disablement and destruction of the mental faculties. The sad and hopeless condition of Secondary Dementia, exhibited by so many of the patients in every lunatic asylum, is thus brought about. I know few sights more impressive than that which one sees on visiting, at a lunatic asylum, the day-room set apart for these hopeless dements. There they sit, wrecks from the fires of the various forms of insanity. Passive and inert, inattentive even to the calls of nature, they take no notice of each other. They sit still for the most part, and many of them would never move from their seats if not made to get up, and taken out for exercise. In some, the fire of insanity is quite burnt out, and the mental faculties are totally extinct; in others, it smoulders on in the form of some enfeebled remnant of the delusions with which the mind was once all ablaze. Some of the patients exhibit curious forms of automatic activity. One may constantly rub his hands together; another may stand upon the floor and perform perpetually a curious swinging or balancing movement; and some may be constantly engaged in muttering to themselves those curious automatic maundering monologues already described, in which few articulate words, and no definite meaning, can be detected. Among this assembly of people deprived by insanity of their mental faculties, are usually a few who owe the deprivation to the disease known as General Paralysis of the Insane. In these cases, the terrible disease of which they are the subjects will soon destroy life itself. In this day-room the wrecks left by most of the various severer forms of insanity will be found collected together. Some have been Melancholic; a larger number have been Maniacal; others are Epileptic; others have been Alcoholic; some are cases of Senile Dementia; and others are the subjects of General Paralysis of the insane. The hopeless condition of Secondary Dementia may be the consequence of any one of the graver forms of insanity.

It is among these patients with dementia that the Reflex and Automatic forms of speech already described are so often met with. Echolalia is common among them, especially when dementia is far advanced. The reflex speech, exhibited in the giving of Conventional Replies to conventional questions, is also often met with. Their automatic maundering Monologues have already been described: in some of the cases of advanced dementia to be presently noted, these monologues will be found to have become so degenerate as to have lost all resemblance to words, and be comparable only to the babbling of infants.

Even in patients, however, in whom the monologues have been reduced to mere babbling, it is very striking to find that if by any means the attention can be roused, and the patient got to reply to a question, he will reply to it in words whose articulation is practically perfect. I am, of course, speaking now of cases where the dementia is pure, and not complicated by motor paralysis. The speech-centres thus evidently retain their store of verbal images, even for many years after the mental faculties have almost ceased to employ them.

A. CASES OF SIMPLE DEMENTIA WITHOUT MOTOR PARALYSIS.—When treating of the Speech of Imbecile Children (*Edin. Med. Journ.*, Feb. 1892), I gave, from notes taken at the Larbert Institution, a series of cases showing a gradual ascent in intelligence and speech-power, from mental zero up to an almost normal level of intelligence. These were cases of Amentia, in which mental Development was more or less incomplete. In dealing now with cases of Dementia, in which the mind has become enfeebled or been annihilated, it might be possible to give a somewhat similar series of cases. They would begin with cases of slight enfeeblement, not far removed from the normal level; and descend, step by step, until the last case displayed a condition of mental zero. But in order to make up a complete series of this kind, one would require to look for the slighter cases, not in asylums, but at their private homes. The short series of cases of dementia which I now present, having been selected at the Royal Edinburgh Asylum, is therefore incomplete, none of the slighter grades being represented. But, such as it is, it may be of use, as showing gradations in intelligence and speech-power. I select, for the series, exclusively cases of the secondary dementia that so often results from Adolescent Insanity. Dr Clouston, who is the chief authority upon this form of insanity, points out that the dementia resulting from it is very often total, and that it is usually pure and uncomplicated, being much less frequently than the other forms of secondary dementia associated with paralytic or other conditions that might obscure its symptoms.[1] It is a form, therefore, better suited than any other to show the effects of Dementia, pure and simple, upon the speech of the patients.

CASE I.—*Replies in absent-minded manner to questions, occasionally reads, but does not understand what he reads. Exhibits Echolalia. Generally sits silent and still all day, unless told to move. Is cleanly.*—W. C. (male), æt. 27. Admitted three years ago, suffering from Adolescent Insanity with melancholia. Heredity very bad. In reply to most questions, says, "No, Sir." Occasionally, "Yes, Sir." Can give his name and age. Asked where he is, says, "I don't know, Sir." Then says he lives in Edinburgh. Says this place is Hell. Occasionally reads a newspaper, and sometimes does so aloud, but probably does not understand what he reads. Asked why he reads, says, "Because it pleases me." "Do you read any other paper?" "I don't remember." Has gradually spoken less and less with advance of dementia. Now, would sit still in one place all day, unless told to move. Occasionally exhibits Echolalia. Occasionally sings to himself in good tune.

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[1] See Dr Clouston's paper on "Secondary Dementia," *Journal of Mental Science*, October 1888.

CASE II.—*Patient in much the same condition as Case I., only a little worse. Echolalia. Babbling monologues. Is dirty.*—I. A. A. (male), æt. 28. Heredity very bad. Adolescent Insanity (mania) at 23. When this passed off, dementia set in. At first the patient read a good deal, and seemed to understand what he read. Now he never reads, but he often looks at the pictures of the *Illustrated News*. When spoken to, sometimes repeats the last words spoken to him by Echolalia. Sometimes laughs and grunts to himself in a silly way. Sometimes he babbles to himself unintelligible sounds in a whisper. To-day, in reply to every question, he replies "elves," in a whisper. He varies a good deal, being sometimes very silent, and sometimes babbling to himself for a long time in baby-like fashion.

CASE III.—*Deeply demented, being dirty in habits and eating anything she can pick from the floor. Babbles to herself. Can, however, do a little simple house-work; and, when attention is roused, can give her name; and can name correctly, and with perfect articulation, a number of articles shown to her.*—M. M. (female), æt. 32. The dementia is now of some years' standing. Has a good head, face, and figure; looks healthy; and at first sight looks intelligent enough, eyes being clear and bright (though rather restless), and there being an upright wrinkle between the eyebrows, as if from habit of thought. Patient, however, mutters (babbles) to herself unintelligible sounds in a whisper. Can be got to do nothing useful, except to brush the floor with a long brush. Would eat anything she can pick up (cat's meat for example), if not prevented. When a bag of sweetmeats is brought to her, would eat up "bag and everything." Never speaks except when spoken to. Gives her name, and names correctly and with perfect articulation, a watch, a chain, a key, cuffs, a penny, a handkerchief, etc. Requires assistance in dressing and undressing. Is dirty. Never shows affection for any one. Does not sing.

CASE IV.—*Speech production nil; but understands simple orders, and is able to dress himself and keep himself clean. Is quite taciturn, and is dull and listless. No emotions.*—J. M. (male), æt. 33. Admitted eleven years ago, suffering from Adolescent Insanity in its maniacal form. From the first beginning of the dementia, he spoke little; but he sometimes whispered to himself, and his replies to questions were always given in a whisper. At present he never speaks, and has not been heard to do so for years. Never laughs or gets angry; emotions seem gone. Is generally sedentary, but sometimes wanders about the room, picking things off the floor. Is able to dress himself and keep himself clean. Understands and obeys simple orders; moving from chair to chair, for example, when asked to do so. When looked at, keeps his eyes shut. When asked to put out the tongue, protrudes its tip slightly beyond the edges of the teeth. Never sings.

CASE V.—*Dementia complete. Habits dirty. Never speaks. Cannot understand anything. Babbles incessantly to herself. Sings well! and in singing is said to pronounce the words perfectly.*—C. T. (female), æt. 20. Dementia came on after an attack of adolescent insanity. Was formerly a bright girl. Is well grown and developed, and, physically, appears healthy. She has a vacant but not unhappy expression. Is quite heedless as to evacuations. Sitting in her chair, she occupies herself almost incessantly in doing one of two things, or both of them together. (1.) She rubs the flexed fingers of her right hand rapidly upon the extended palm of her left. (2.) She babbles to herself continually, looking before her, or to one side, as if addressing some one in conversation, and nodding her head from time to time as if to give emphasis to what she is saying. At a little distance one would suppose that she was talking to an imaginary companion; but, on listening more closely, it is found that the monologue is composed of babbled consonant and vowel sounds, very similar to the sounds produced in the babbling of babies, only that the execution is more rapid and vigorous. I tried to write down some of the sounds, but found it very difficult to do so, owing to the rapidity of their utterance. I got, however, **th, man, th, what, whe, tan, m, m, hi, i.** At my first visit the only words I could catch were **man** and **what,** as shown above; but I was told that occasionally bad words appeared in the monologue; and this observation was verified when I saw the patient for the second time, several such words being then pronounced with unmistakable distinctness. The monologue in this case has thus degenerated to a stage almost as low as it is possible for it to reach,—to a stage far lower, for example, than the really verbal, though meaningless, monologue of Dr Robertson's case of senile dementia already quoted. The emotions of this patient are gone. She never shows affection and never gets angry. Occasionally, instead of rubbing one hand upon another, she tries to tear her dress; but her dress is now of such material as to resist tearing. *She sings well.* As it is generally in the night-time that she sings, I did not hear her; though the nurse kindly tried to entice her to sing, by singing to her her favourite song. The song is "Love's golden dream is past," which, the nurse says, she sings in perfect tune, and with perfect articulation. There is positively no other way in which the patient's attention can be aroused. She never pays attention to anything else, and never replies even to the simplest question.

To hear a patient in the condition of advanced Dementia sing well is very startling. It is even more so than to hear the good singing of imbecile children. How is it that the musical faculty is thus often preserved intact, or almost so, when the mind has been laid in ruins? I do not know that physiological science can yet answer that question. To find the faculty intact in such a case as this last one, produces in one's mind the same kind of feeling as one would experience, if, in searching in the ruins of some dwelling-place that had long since been destroyed by fire, one found some pretty domestic ornament, unbroken among the débris.

It is not only in the dementia resulting from adolescent insanity that the musical faculty is thus able to maintain itself intact. It may be found equally so in dementia resulting from many other forms of insanity. Thus, there is at present in the Royal Edinburgh Asylum a man now far advanced in dementia, in whom the condition resulted, in middle life, from repeated attacks of mania brought on apparently by alcoholism. This patient was once a clever workman, and used to play the violin. Although now dull and stupid, he wakes up a little when asked to give his favourite musical performance. This is an imitation of the notes of the bugle, which he does with his mouth, placing the right hand vertically against the right side of the mouth. The performance is surprisingly good and tuneful, the notes being wonderfully like those of the bugle.

B. DEMENTIA WITH PARETIC OR PARALYTIC ELEMENTS IN THE ARTICULATION OF WORDS.—The leading element in this paretic articulation is Slurring, which renders the speech thick and slovenly. Apart from insanity, there are many conditions which may cause the speech to be slurred and slovenly. During Inebriation, for example, the speech may be slurred. A few glasses of wine may make it risky for the individual to attempt the articulation of such an expression as "mutual eligibility"; and we know what becomes of "British Constitution" when there is distinct inebriation. Other conditions may, in like manner, impair the articulation for a time. Great Mental Fatigue or Depression may cause, for the time, a little carelessness and want of precision in the articulation of difficult words. The symptom is also a common one, and may be permanently established, in many cases of Organic Disease of the Brain, due to coarse lesions. But I do not wish to look at these conditions at present. I want now to speak of this symptom, and other associated peculiarities of speech, as they occur in certain forms of Dementia. The two forms of dementia in which it is most commonly met with are—(1), Senile Dementia, and (2), Paralytic Dementia—the General Paralysis of the Insane. In both of these the symptom is of ominous significance. It shows that paralysis is creeping down from the higher mental to the lower motor centres in the brain. This downward march is apt to proceed until the functions of the brain that are concerned with the maintenance of life itself are finally involved. Referring to this paretic element in the articulation of dementia, Esquirol has said—"L'embarras de la parole est un signe mortel." The axiom applies with double force when the form of dementia is that of General Paralysis of the Insane. Let us then consider the two forms of Dementia in which this paretic element in articulation is specially exhibited.

(1.) *Senile Dementia.*—When age is far advanced, the mind is naturally more or less enfeebled. This is the rule, though we all know that, in exceptional cases, the mind remains wonderfully strong and vigorous long after the ordinary term of human life has been overpassed. When the mental feebleness, natural to extreme old age, is exceptionally well marked, the case may be reckoned as one of Senile Dementia. This may set in prematurely, owing to a bad heredity, or to former habits of intemperance or over work, or of hard living of any kind. It may be predisposed to by atheromatous degeneration of the cerebral vessels. It may be rapidly established after an attack of senile melancholia, or a passing attack of mania, or in consequence of the depressing influence of a great sorrow, or of a mental strain of any kind. In some cases the dementia is total, or almost so; and in these the Monologues, and some of the forms of Reflex Speech already described, will generally be exhibited by the patient: but in a great many cases there is marked enfeeblement rather than abolition of the mental faculties. The old man passes into his second childhood. As in all other forms of dementia, the memory is one of the first of the mental powers to suffer deterioration. New impressions are not retained by it. Though the old man may be able to live in the memories of the past, and to tell long stories of the events of his youth, he is apt to forget such simple things of the present as the day of the week, or what he had for breakfast. It is the exceptionally severe cases that one finds in asylums.

Passing over the features which are common to this and the other forms of dementia, let us look for a moment at the Intonation and Articulation of speech in senile dementia.

In extreme age the Voice loses its former volume, its depth, and its variety of intonation. It tends to become monotonous, and of higher pitch than it was wont to be.

> ". . . . . . his big manly voice,
> Turning again towards childish treble, pipes
> And whistles in his sound."

But this change in pitch is due rather to physical than to mental decay, and it is not usually met with in cases where senile dementia sets in prematurely. Much more closely associated with the dementia are the changes observable in Articulation. In the articulation there is usually observable a distinct element of Slurring. Here is what Dr Clouston, who has made a careful study of this form of speech, says about it:—"No one can look to a man in his extreme dotage talking without perceiving that the motor apparatus of articulation is as much affected as the mental apparatus. When looked at carefully, we see, in the first place, that there is a certain amount of slowness, indistinctness, and hesitancy of speech—a paresis, in fact. Then, in some cases, we see that, like the general paralytic patient, there is a certain amount of convulsive tendency, seen in the tremor of the labial and lingual muscles. The first words of a sentence, or the first syllables of a long word, are far more distinctly enunciated than the last, showing an easily exhausted stock of nervous force, as well as a paresis. Then there is a want of co-ordinating power. The words having many *th* sounds are not properly enunciated, *e.g.*, the patient cannot say, 'The astonishing thing is that those thieves should think this.' The power of rolling the *r*'s is deficient too. There is also a distinct tendency to reversion, in the resemblance of such speech to that of a child learning to speak. Finally, there are well-marked aphasic symptoms in some rare cases. I have a woman now in the Royal Edinburgh Asylum who when she wants to say, 'Now you take that,' says, 'Now you ter ter ter.'" There are thus features in senile speech which relate it to the speech of general paralysis of the insane; but there is not on this account much risk of error in diagnosis. General paralysis is very rare at the advanced age when senile speech appears; and, as Dr Clouston remarks, "A close study of the speech will usually determine the difference. There is not the true general paralytic trembling, or the spasmodic convulsions of the smaller facial and labial muscles."[1]

(2.) *General Paralysis of the Insane.*—Every one knows the terribly fatal character of general paralysis of the insane. On the average it runs its course in two or three years. The stages of the malady in its common form are also familiarly known. First there is the stage of Mental Exaltation, with its extravagant notions of grandeur, and its foolish and sometimes criminal actions; also with its slight tell-tale disturbances of speech, which the alienist looks to specially, in trying to distinguish the case from one of ordinary mania with exaltation. Then, in the second stage, with persistence of the exaltation, there is more distinct loss of memory; more evident affection of speech; and the appearance of incoördination in such other complicated movements as those of walking, washing the hands, and buttoning the dress. Lastly, in the third stage, the mind is sunken deep in dementia; the speech totally inarticulate; and the body paralysed, not only in its powers of voluntary movement, but also even partly in its reflexes, so that feeding must be carefully performed, lest the patient should choke, owing to paralysis of the reflex for deglutition. Utter ruin of both mind and body could not be more terribly exhibited. Mercifully, in a great number of cases, before this stage is reached, life is cut short by one of the "congestive" or epileptiform attacks that tend to occur in the course of the disease, with increasing frequency from the first stage onwards.

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[1] Dr Clouston on "Disorders of Speech in Insanity," *Edin. Med. Journ.*, April 1876.

In this typical course, the disease proceeds, as it were, from above downwards—first mind is affected and then motion; and the mind displays the typical exaltation that has been referred to. But there are many cases in which the typical course is not strictly adhered to. In the first place, there is a group of cases that never display the typical exaltation with delusions of grandeur. In these the mental failure sets in with simple loss of memory and mental power, and often with depression of spirits. But these cases present the same speech peculiarities, and run ultimately the same course, as cases that have the delusions of grandeur. In a third group, the motor symptoms may appear before the mental, and keep in advance of them almost throughout. When I was making my notes of cases at the Asylum, one poor man in this condition was pointed out to me. His motor functions were deeply involved and his speech much affected, but his mind remained comparatively clear, and he seemed to realize his own sad condition in a manner that is rare among general paralytics.

It is well known that the victims of this disease are generally men in the prime of life, and often previously of fine physique. Hard living and dissipation, especially if associated with hard work, physical or mental, are usually regarded as its most potent causes; the influence of heredity being by no means so marked as it is in the case of other forms of insanity.

Before proceeding to attempt a more detailed analysis of the defects of speech in General Paralysis that can be detected by the ear, let us, in the first place, take note of an associated symptom that is perceptible to the eye: I mean the presence of abnormal movements in the lips and features, and in the tongue.

The most characteristic of these movements are occasional quick, momentary Twitchings or Shiverings in the upper lip, or in the naso-labial fold, or sometimes in the muscular fibres of an eyelid. They occur most markedly when the patient is speaking, or is otherwise moving the lip, as in opening the mouth to protrude the tongue. A portion of the Levator Labii Superioris, or of the Orbicularis muscle of the mouth or of the eyelid, or of a muscle in the chin, suddenly and slightly twitches from time to time. In most cases these slight twitchings do not exhibit themselves when the features are at rest: it is when a voluntary movement is made, as in speaking or opening the mouth, that they appear. With the slight twitches there is often associated, during speech, a general trembling of the lips, like that sometimes seen in the lips of a healthy person during great emotional excitement. The twitching and trembling in the facial muscles may sometimes be brought out with special distinctness if the patient be asked to open the mouth and protrude the tongue, especially if the mouth is not widely opened, and the tongue is only half protruded.

In the tongue, when it is protruded, there is generally much movement. There is often trembling and general restlessness of the whole organ, and there are also, as a rule, wave-like contractions in bundles of its muscular fibres; yet in some cases, when the mouth is merely opened, and the tongue is not protruded but allowed to lie in position, the movements are absent, the tongue being then quite still.

I take it that these wave-like contractions and tremblings in the features and tongue, appearing as they do almost exclusively during voluntary movements of the parts, are due to disease in the motor cells of the Cortex. But as the motor cells of the Medulla are also often involved in General Paralysis, I think we should also, in some cases, find small fibrillar movements going on constantly in the muscles, even when they are otherwise at rest. These fibrillar movements, of medullary origin, should be associated with wasting. We see such wasting and fine fibrillar movement in the tongue, when it is becoming paralyzed owing to the disease in the motor nuclei of the medulla known as Glosso-Labio-Laryngeal Paralysis. I do not suppose that anything comparable, in degree, to the wasting exhibited in this disease will be met with in the general paralysis of the insane; but one would expect fine fibrillar movements of the same kind to be exhibited, when the disease has involved the motor cells of the medulla. The twitchings in general paralysis certainly for the most part involve larger bundles of muscular fibres than do the fibrillar movements of glosso-labio-laryngeal paralysis. They may be termed fascicular rather than fibrillar; and, for the most part, they appear only during the performance of voluntary movements. The question whether true fibrillar movements, associated with wasting, ever occur along with them, my own observations do not yet enable me to answer.

As the disease advances, these movements of the features and tongue, very slight, if noticeable at all, at the beginning of the first stage, become more and more marked; and, at the same time, Paresis of Movement in the features and tongue becomes more and more apparent. In the features, the upper lip sometimes assumes a flaccid and pendulous appearance, as if it were imperfectly supported by its suspensory muscles—the "veil-like upper lip." In the tongue, impairment of voluntary movement soon becomes very evident. Dr Clouston says:—"In the second stage of the disease, the want of co-ordination is very choreic in its character, but with the convulsive tendency in addition. Tell a paralytic patient in the first stage to put out his tongne, and he at once does so; but you see quiverings running down groups of the fibrillæ of its muscles. Tell the same man in the second stage to do so, and he puts it slowly out, the whole organ being pushed about in a very unsteady way, through its muscles not acting harmoniously towards the desired end. Tell him, in the end of the third stage, to do so, and the only response is his moving the organ about a little, without being able to protrude it beyond the mouth. Any one accustomed to see much of the disease can often diagnose it, and the stage it has reached, from the tongue alone."[1] But, at the beginning of the first stage, perhaps the little occasional shivering or twitching in the upper lip or naso-labial fold is more important and distinctive, in a diagnostic sense, than even the quiverings that run down the muscular fibres of the tongue.

Coming now to the consideration of the Defects of Articulation in General Paralysis, we have to note:—

a. The Slurring of difficult consonants, like that so distinctly exhibited by inebriates. At the beginning of the first stage it is often absent, or, if present, may be only exhibited in such test-words as **truly rural, British Constitution,** or **mutual eligibility**; but it becomes, with the increasing paresis, more and more marked as the disease advances. In the first stage, it may sometimes be brought out by causing the patient to repeat one of the above expressions several times over. Often after a few such repetitions the limited supply of nerve force gets exhausted, and slurring becomes evident. Similar fatigue and slurring may be induced by causing the patient to repeat an alliterative sentence. At the Royal Edinburgh Asylum, the favourite sentence for this purpose is:—"**Round the rugged rock the radical rascal ran.**" There are few cases, even in the first stage, that will repeat this sentence once or twice without at last getting into a sort of inarticulate slur about the end of it.

b. Even more diagnostic than slurring is the derangement of articulation termed by Kussmaul Syllable Stumbling. For the purpose of testing patients for this defect, the favourite test-words at the Royal Edinburgh Asylum are **Hippopotamus** and **West Register Street.** Here is what one of the patients made of Hippopotamus:—"Tahippotapotapos." **West Register Street** is in like manner often put into some such condition as "West Regigistrerer Street." Kussmaul recommends the use of the test-word **artillerie,** and tells how it is often converted into "artrallerie" or "rartrillerie." He adds that **Peking** may be converted into "keping," and **guten morgen** into "goten murgen."

What does the evident incoördination of speech in this Syllable Stumbling depend upon? It is probably, as Kussmaul suggests, a defect in the formation of the psycho-motor word-images; the images being most imperfect when the words are complicated and difficult. A word is composed of letter-sounds arranged in sequence. If the sequence of the letter-sounds is imperfectly remembered some of the letters may be sounded in the wrong places. This is one of the two characteristics of Syllable Stumbling: the other being a stumbling and rapid repetition of one or more of the syllables. In Slurring, on the other hand, one may suppose the image to be perfect, and that the defect is merely in the power of exteriorizing or executing it.

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[1] "Disorders of Speech in Insanity," *Edinburgh Medical Journal,* April 1876.

Syllable Stumbling may be exhibited in the articulation of difficult words even in the earliest stage of general paralysis, before any slurring can be detected. Kussmaul says:—"Syllable stumbling may make its appearance in the *earliest stage of general progressive paralysis*, at a time when the motility in general does not present the least sign of diminution, and when the movements required for the production of sounds, and for all other voluntary objects, are still perfect (Parchappe, *Bull. de l'Acad. de Méd.*, t. xxx. p. 702)."[1] It becomes more and more marked as the case progresses.[2]

c. Owing to increasing difficulty of articulation, the utterance of the patient, in the advanced stages, often becomes Slow and obviously Laborious. It may even, for a time, assume something of a "Staccato" character. Ultimately, about the end of the third stage, speech may become totally Inarticulate.

d. The above being defects displayed specially by the Oral Articulative mechanism of speech, we have now to remark that the Vocal mechanism does not wholly escape. In the advanced stages, the voice is apt to become monotonous and sometimes high-pitched, and to assume a peculiar Ægophonic Trembling. It has, in fact, been likened to the bleating of a goat.

e. It should be noted that the failure of memory which is so marked an element in the symptomatology of the disease may be displayed, when the disease is advanced, in the difficulty the patient experiences in committing a few words to memory. I tried hard to get one poor man to repeat accurately after me the lines, "Mary had a little lamb, Its fleece was white as snow," but he could not master perfectly even the first line; although, in former times, when he was in health, he had often repeated the verses to his children. I remarked, in this case, that any emotional expression, such as "Oh dear me," "This is very sad," was much more perfectly articulated than anything the patient said that was not dictated by emotion,—another instance of the power of an emotional stimulus.

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[1] Kussmaul, *op. cit.*, p. 808.

[2] It is to Syllable Stumbling more especially that Esquirol's axiom as to the deadly significance of embarrassment of speech applies. Slurring is met with even in the monologues of Adolescent Dementia: and these cases notoriously often live for many years. I think Slurring in Dementia should be regarded as a symptom of advancing *physical* decay only when it is exhibited in the patient's speech even when his attention is fully roused, as in replying to questions. In the Monologues it is due to absence of mind and want of attention, not necessarily to disease in the articulating centre.

f. Lastly, it may be added that temporary Aphasia is common in general paralysis, especially after congestive attacks.

In the whole range of the disturbances of speech that are met with in connexion with Insanity, there are none of so much practical significance as the disturbances in General Paralysis of the Insane. That is why, in the above notes, I have ventured to treat of these disturbances in some detail. A knowledge of their earlier manifestations is important, not only to the alienist, but also to the ordinary physician and the general practitioner.[1]

I cannot conclude this paper without making most grateful acknowledgment of all the kind assistance I have received, during the past year, in studying the speech of the insane at the Royal Edinburgh Asylum. Dr Clouston granted me free permission to visit the Institution as often as might be necessary; Dr Robertson, his senior assistant, selected suitable cases for me; and Dr Middlemass, one of the junior assistants, helped me greatly in taking notes of them. Without these opportunities for study, and the assistance so courteously given, I could not have written this paper.

(*To be continued.*)

II.—NOTE OF A CASE OF ACEPHALIC ACARDIAC FŒTUS.

By J. HALLIDAY CROOM, M.D., F.R.C.P. Ed., F.R.S.E., Physician to the Royal Maternity Hospital; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 11th January* 1893.)

THIS fœtal monstrosity, whose external appearance is well represented in the accompanying Drawing, I had sent to me some little time ago. It consisted of a somewhat oval trunk, to the narrow end of which was attached a rudimentary distorted lower right extremity, with no semblance whatever of a head. The trunk was not bilaterally symmetrical, the side to which the rudimentary extremity was attached being rather the larger. On its anterior and lateral aspects the trunk presented a transverse groove about its middle; three-quarters of an inch above this groove the umbilical cord was attached, while extending upwards for about two inches beyond

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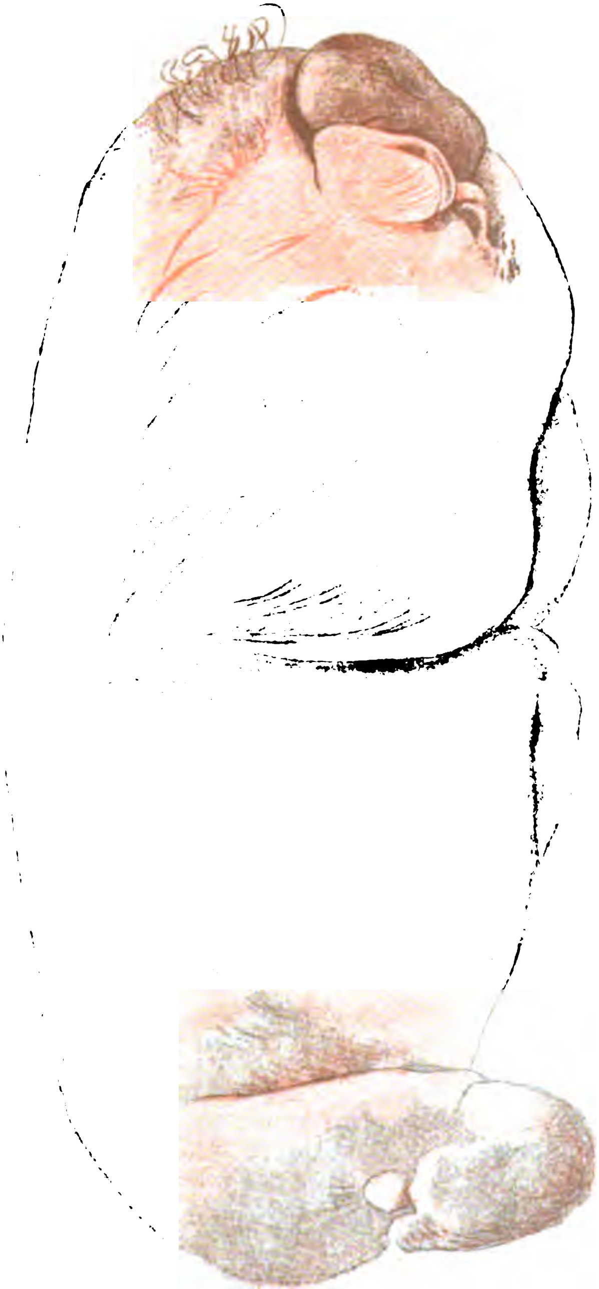
[1] It should here be remarked that, while in almost all cases the peculiarities of speech and the other symptoms in General Paralysis render the diagnosis comparatively easy, there are two other morbid conditions which sometimes produce the very same symptoms, viz., Chronic Alcoholism, and Syphilis of the cerebral cortex. But these cases often recover under treatment.



CEPHALIC [illegible]

was a thin membrane, under which the appearance presented considerable difference from that of ordinary skin.

From the circumference of this surface the membrane projected outwards, terminating in a free edge. This was, in all probability, the wall of a ruptured serous sac. Half an inch below the transverse groove, a small nipple-shaped body formed a projection of the size of a large pin's head, being surrounded by a circular groove.

On the right side of the upper end of the trunk there were two rounded sessile projections—one, the external and smaller, being covered by ordinary skin; the other having a wrinkled integument of a purplish tinge. Immediately in front of these were situated five conical bodies, the largest of which was scarcely a quarter of an inch in length, and which, from their relative positions, appeared to represent a rudimentary thumb and four fingers. On the posterior surface, for about an inch below and behind the projections just described, the integument was covered with a quantity of hair.

On palpation the tissues beneath the skin were firm and resistant, while here and there bony outlines could be detected.

Dissection.—The skin on the anterior wall of the trunk, from a little below the transverse constriction nearly to the lower end, was removed in the form of flaps, and exposed a quantity of gelatinous-looking tissue, with here and there a little yellow fat interspersed. This tissue was three-eighths of an inch in thickness, and from it there oozed a quantity of watery fluid. Under it were exposed a number of muscular fibres having a longitudinal and oblique direction, and on tracing them down they were found to extend on to the base of the limb. The joint at this site where the limb joined the trunk was opened, and found to be that of the knee. The transverse line, previously described as being on the trunk, represented the junction of thigh with trunk.

On reflecting the skin between the umbilicus and the transverse groove a quantity of subcutaneous œdematous tissue was removed, and what appeared to be pelvis and lower ribs could be felt. When reflecting the skin on the left side of the umbilicus a delicate membrane was exposed, which was divided, and a cavity was thus opened into. In this cavity a piece of intestine was exposed, which appeared to commence blindly by a rounded extremity. It then formed a loop, having its convexity upwards and to the left, afterwards passing downwards. Throughout its extent it was connected to the posterior abdominal wall by a kind of mesentery. It was altogether only an inch in length, and was of uniform calibre. The abdominal cavity on both sides was occupied by loose fibrous tissue, with a number of spaces between. On the left side was an elongated body of about three-quarters of an inch in length adherent to the abdominal wall, and having its long axis in the line of the body.

The back of the thigh was found on dissection to form the lower part of the anterior surface of what had first appeared to be the trunk. At the juncture of the thigh and trunk there was a bony prominence to which muscles were attached both above and below, and from it also ligaments, tendons, and membranes arose. The biceps, with one head arising from the bony prominence, and the other from what appeared to be the side of the sacrum, the hamstrings, sartorius, a muscular mass representing psoas and iliacus, could all be made out. On reflecting the mass of psoas and iliacus a stout fibrous capsule was exposed, and when this was opened there appeared a bony structure, evidently the head of the femur, but no corresponding acetabulum was present.

The gracilis, rectus, and adductors, were then made out and reflected, but no appearance of Hunter's canal, or femoral vessels could be discovered in their normal position. The other muscles could now be distinguished mainly taking origin from the side of a bony mass which seemed to represent the sacrum. The anterior crural nerve passed out of the abdominal cavity over the head of the femur, whilst the gluteal and sciatic vessels passed over the obturator internus. The capsule of the hip-joint was very thick, and there was a band representing the ligamentum teres.

Skeleton.—There was no appearance of a skull; the prominence corresponding to the position of the cranium was found on dissection to be composed merely of skin covering a dark-coloured pulpy substance, which communicated with a similar substance found in the vertebral canal. At the upper part of the spinal column were found large bony masses, irregular in shape, and perforated by a foramen for transmission of a structure representing the spinal cord. These bones occupied the whole of the cervical region. The dorsal region seemed to be represented by four vertebræ, the bodies of which were well developed. These had transverse and spinous processes, and the laminæ were broad, but did not overlap. Attached to the vertebræ on the left side were seven ribs, the four upper being ossified together, while the remaining three were loose. On the right side there were four ribs ossified in pairs. They had very little curvature, and were not united to those of the opposite side. On removing them there was found to be a large general cavity, in which were vessels from the umbilicus—two arteries and a vein—but no trace of a heart could be seen. The ribs were connected anteriorly by muscular fibres to the bony mass in front of the pelvis. On the right side, corresponding in position to the arm, lay a piece of partially ossified cartilage bound to the ribs.

In the position normally occupied by the pelvis was an irregularly-shaped bone, with its posterior half concave, and having on the upper border a depression for articulation with lumbar vertebræ; on the inferior border were two prominent tubercles.

The labour had taken place as an abortion without further complication, and, unfortunately, when sent to me the umbilical cord and placenta were awanting.

III.—NOTES ON A CASE OF GLYCOSURIA.

By FRANCIS TROUP, M.D. St And., M.R.C.P., L.R.C.S. Edin., Assistant Medical Officer to the Longmore Hospital for Incurables, Edinburgh.

A CASE of very moderate glycosuria came lately under my notice, and the following observations, made daily and continuously for upwards of five months, may be thought to have a value by no means slight. The patient, an elderly man, active in body and mind, had a parental history of death from diabetic gangrene, and a maternal one of death from phthisis. His teeth loosening and dropping out without decay led him to have his urine examined, and to the discovery of the sugar excretion. His general symptoms, consisting chiefly of weakness and muscular pains of the lower limbs, were not at all severe, and he willingly subjected himself to the above-mentioned five months' course of investigation as to the comparative effects of drugs and diet in the treatment of his disease.

First of all some weeks were spent, without treatment of any kind save abstention from sugar, in determining the daily amount of urine voided, its urea, its absolute quantity of contained sugar, the percentage of the latter, and what Traube has called the intensity of its excretion. This latter is managed by examining separately each portion of urine passed, ascertaining its absolute saccharine contents, and dividing by the time during which the secretion has lasted. This gives a satisfactory view of the march of events, the sort of pattern of the disease, and the mode in which the sugar-excretion varies. It is not at all suggested here that every case of glycosuria will conform to the type observed in this one under consideration; doubtless each separate case will have its own mode of behaviour, but it seems to me that the effect of therapeutic measures can only be rightly studied by proceeding in the way indicated. As formerly stated, no change was made in the diet save exclusion of sugar; the drink was measured and varied not from day to day, and consisted almost entirely of sweet milk, morning tea or coffee, and afternoon tea. Without loading this brief paper with figures, and so burdening needlessly the minds of possible readers, I give a synoptical statement of the principal results obtained.

1. Food and drink remaining absolutely the same in quality and quantity, the amount of head and limb-work being also practically the same, the aggregate measure of urine passed showed surprising oscillations, wavering through all the decades between 31 oz., the minimum, and 92 oz., the maximum.

2. The absolute amount of sugar may at times be found greater in a specimen of urine of low specific gravity than in one of higher density.

3. The same is true of the intensity of the sugar excretion.

4. Contrary to *à priori* suppositions, the Turkish bathing, in which the patient freely indulged, had little appreciable effect in lessening the daily amount of urine; on the contrary, on one occasion the quantity jumped from 58 oz. the day before to 70 oz. the day on which the bath was taken. One may wonder if the bath drives the interstitial fluids into the blood, to be again excreted by the kidneys.

5. It was found that there were two daily maximal excretions of sugar and one minimal. The first maximum was found from 10 to 12 in the forenoon, the second about 6 or 7 P.M.; the minimum was invariably found in the morning hours before breakfast.

6. This fact stands obviously in close relation to the taking of food, and shows the wisdom of judging of the amount of sugar by examining the mixed specimens of twenty-four hours.

The quantitative estimations were made with the Pavy-Fehling solution properly standardized by two separate chemists, and controlled now and then by the use of Knapp's standard solution of mercuric cyanide and caustic soda; this latter is a very delicate test, much more so than Fehling. Von Fleischl's spektro-polarimeter—a very costly but very perfect apparatus, optically considered, and the best saccharimeter which has yet appeared for clinical purposes—was also used in the estimations, but it was found that, where fractional percentages were to be dealt with, it was not so trustworthy as the Pavy-Fehling and the burette; where precision is wanted it will not be found by a mere turn of the fingers. But to return to the subject; the conditions of life remaining the same, a period of six weeks was spent in trying various drugs, old and new, of more or less repute in controlling sugar excretion. Among the new were syzygium jambolanum, iodide of gold, and sodium taken to salivation, antipyrin in large doses, and natural salicylate of soda; the urine was examined in the same continuous way, but no alteration in the quantity of its saccharine contents could ever be determined; the fluctuations in the amount of urine passed remained also more or less the same.

Diet, and diet alone, was now tried for four or five weeks: gluten bread, free use of eggs, fish and flesh, cheese and milk, and no carbohydrate save an occasional cauliflower or broccoli. In a day or two the percentage and absolute quantity of sugar fell notably, and at length became reduced to ·03, below which it never could be brought; during those weeks, however, the body weight fell rapidly, about one and a half pounds weekly, and the patient, thinking that a little sugar was not so bad as getting thin and weak, determined to have his porridge again, and bread and potatoes now and then. Gluten bread is dry feeding, but if the rusks are ground as finely as possible in a coffee-mill, and baked with eggs, butter, and milk, a much more palatable food is obtained. The formula used was: 4 oz. of gluten meal, 3 eggs, 2 oz. of butter, and 10 oz. of milk; these ingredients are warmed and well stirred together, and baked in buttered tins in a warm oven. Where teeth are bad and time to spend over meals is scanty, this mode of preparing the rusks has great advantages.

At the present time the patient's diet is of this mixed sort,—the gluten cakes, a little starchy food, no sweets; the body weight has again increased, so has the sugar. With this mixed diet of flesh and starch various pancreatic preparations have been tried, and the pancreas, finely divided, is eaten raw, so as to secure the supposed glycolytic ferment unaltered by cooking operations; but this experiment seems to have as little influence as other things over the sugar, but it has not been continued sufficiently long for me to pronounce a decided opinion.

From the foregoing statements it would seem that what was known to Aretaeus in the first, continues true in the nineteenth century, namely, that the most successful treatment of diabetes is a dietetic one. Cases which react easily and promptly to alimentary influences are usually regarded as slight ones. I am not sure of that; at least it is not universally so. There is at present in the Incurable Hospital a paraplegic who came in two years ago passing 140 oz. of urine daily, of specific gravity 1045, and containing 10 per cent. of sugar. Strict diet in some months reduced the amount of urine to a third, the specific gravity to 1030 or thereabout, and the percentage of sugar to 2. It may be mentioned here that in this case also medication seemed to be of very subsidiary value to the dieting. When the sugar has been degraded even to a fractional minimum, and this minimum obstinately refuses to disappear, one cannot help thinking that the so-called cure is only a relative one, that the evil tendency remains, and is ready to assume its original energy on even very slight provocation, such as trouble or worry, which would not bother a perfectly sound man.

Too strict diet has many inconveniences and some dangers; the human gastric and intestinal arrangements are not fitted up for one kind of food, but for mixed sorts: therefore the stringency of the diabetic diet should now and then be relaxed, and so derangements of digestion will be avoided or tided over; the too great and too continuous use of proteids results in increase of urea, and imperfectly oxidized uric acid may have some causal relation to the appearance of the oxalates which crop up now and then in diabetic urine, and which sometimes seem to announce the advent of diabetic albuminuria.

A few words as to the excretion of urea in the case with which I started. Hüfner's hypobromite process was employed and Charteris' ureameter; the estimations were made about twice a week, and the amount in grains per day varied from 292, the smallest, to 627, the largest. When eggs and cheese were freely used as food, the nitrogen equipoise was always perturbed and the urea rose to its highest point, and when less proteids were consumed the urea fell. The average amount per day of all the observations was 476 grains.

The daily average amount of urine passed during the five months was 53·5 oz.: minimum, 31 oz.; maximum, 92 oz. Average sp. gr. for same period, 1022: minimum, 1011; maximum, 1030.

IV.—OBSERVATIONS ON A CASE OF MYCOSIS FUNGOIDES.

By W. Allan Jamieson, M.D., F.R.C.P., Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine, etc. With an Account of the Pathological and Histological Appearances by Robert F. C. Leith, M.D., F.R.C.P., Pathologist to the Royal Infirmary, Edinburgh; Lecturer on Pathology, Edinburgh School of Medicine, etc.

(*Read before the Edinburgh Medico-Chirurgical Society, 1st February* 1893.)

Under the term Mycosis fungoïde, Alibert in 1832 described, and in the following year figured in his Atlas, a rare disease of the skin, attaching to it the designation mycosis, from the resemblance which the tumours seen in its later stages bear to a mushroom, but without reference to any supposed parasitic origin, though now the word is a generic one, applied to affections manifestly due to vegetable fungi on the exterior of the body, or to ailments produced by the development of microphytes in its interior. The second part of the phrase was superadded, to denote the tendency which the growths have, after attaining considerable dimensions, of opening out and exposing their structure, rather than from the production of any exuberant new formation from the portion thus laid bare. In publishing an account of a case, Tilden[1] in 1885 mentions that he had been able to discover reports, more or less complete, of at least thirty instances; yet the disease is an extremely uncommon one, and, so far as my inquiries have enabled me to discover, no example quite corresponding to the accepted type has till now been recognised in Scotland, though several have been met with in London.

Dr Norman Walker has brought under my notice a case recorded in the *Transactions of the Pathological Society of London*, vol. xxx., 1879, by Dr James[2] Gairdner and Dr Joseph Coats, which had been under the care of Dr Thomson of Dumfries, and in some respects approximates to mycosis fungoides. This was that of a man, aged 52, who had been in robust health till rather more than a year before he was seen in consultation by Dr Gairdner. Tumours, which he divides into the immediately subcutaneous, and those more or less loosely attached to the connective tissue, formed in different parts of the body. None were apparently actually in the substance of the integument itself. Pain of a severe and tearing character accompanied their evolution, but when they reached their full size it diminished in intensity and finally ceased. While most of the tumours seem to have been persistent, some at least altogether disappeared. He lost flesh; sickness, hiccough, vomiting, with colic-like pains, eventually supervened, and he died of exhaustion fourteen months from the manifestation of the first symptoms. It was found at the sectio that there were similar neoplasms in the intestines and adrenal. Though not in a very satisfactory condition, their structure was examined into by Drs Goodhart and Butlin. They pronounced them to consist of small, round, nucleated cells, closely but regularly arranged in a structureless protoplasm. There was no reticulum, but some of the cells were elongated. There were large blood channels in them, and their presence might, they thought, explain the disappearance by absorption of the growths. They held, after consideration of all the circumstances, that they were round-celled sarcomata.

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[1] *Boston Medical and Surgical Journal*, 22nd October 1885.

[2] Should be Professor W. T. Gairdner.

Somewhat parallel to this is a case which was not long since brought to me by a surgical friend. This was a hale man of 64, extremely careful in his mode of life. He had for a little time noticed under the skin of the pubic region hardish swellings. These occasioned a sensation of tension or weight in the part on standing, and each, when handled at its first appearance, was slightly tender, though this did not last. They were situated in the subcutaneous tissue, and the skin was freely movable over them. They felt hardish, though not markedly so, and were about the size of a pea. There were eight or ten in all; one had formed in the right spermatic cord. They were certainly increasing in number, though slowly; had developed consecutively from one original and central one, and thus seemed infective. Without excising one a positive diagnosis was impossible, but fibromata and actinomycosis suggested themselves to my mind; they were scarcely hard enough, it was hoped, for sarcomata.

Before relating the case which forms the subject of this paper, it may, perhaps, be permissible to recall to the recollection of the Members the more prominent features of mycosis fungoides, so that it may be evident how far it is typical.

Apparently in nearly all cases the earliest symptoms are rather indefinite, yet in general three fairly distinct periods in its evolution can be identified. In the first of these the eruption is superficial, often extensive, and differing little from various well-marked forms. Thus it has been described by some as resembling the exanthem in scarlet fever, a widely diffused erythema;[1] or of patches of congestion, evanescent or permanent, developing in crops; or of wheals, which may be occasionally hæmorrhagic; or more usually, perhaps, of an eruption closely assimilating a dry eczema. There is at this time no impairment of health, but as a concomitant there is commonly, though not invariably, severe itching, less frequently burning sensations in the integument. If at first fugitive, the eruption becomes in time more or less persistent, though at this epoch only the epidermis and the upper layers of the corium are implicated. The duration of this stage varies from one to several years. Gradually, however, the skin on the affected parts becomes thicker, the eruption penetrates more deeply here and there. Probably as a result of scratching, which is unavoidable, an appearance somewhat like that of a patch of lichen planus is assumed. Any portion of the exterior of the body may be the seat of disease, but in some cases the elbows, in others the shoulders, are the situations first attacked. This constitutes the second or lichenous stage. Sooner or later the third, or period of tumours, is reached. Somewhere on one of the thickened areas, or at its edge, or possibly on previously unaffected skin, a nodular elevation arises, developing even in the course of a single night. This forms a more or less voluminous projection, which may be hemispherical, oval, or, should several coalesce, irregular. This at the outset is of tolerably firm consistence, but as it enlarges it becomes at the same time much softer. In colour such are most frequently of a brightish red,—occasionally, however, of a dull red or purplish, plum-like hue, more rarely of a yellowish white. The surface, if entire, is smooth and glossy, as if covered by a very thin, tightly-stretched epidermis, so that the comparison made by Alibert to a tomato is by no means an ill-chosen one. As the itching persists throughout, the surface is often torn by the nails, or the tumour may burst, and from the interior thus laid bare a fluid exudes, which readily dries into crusts, honey-like in appearance, or blood-stained, for the tumours, in addition to their soft consistence and succulence, are very vascular. Sometimes a thin flat scab may form, or the surface, instead of being smooth, may be wrinkled and covered with dry epidermic scales. Where the growths are closely set, they encroach upon one another so much as to occasion deep folds, and, indeed, they may be so numerous as to leave over wide areas no portion of healthy skin. Central softening may occur, fluctuation is perceptible, and the nodule bursts like rotten fruit. Crater-shaped ulcers may arise, having ragged margins, and such may even extend down to the bone.[1] Similar nodules in some instances form in the mouth. In a certain number of cases there is found a painless enlargement of the lymphatic glands. After having reached a considerable size, perhaps as much as that of an apple, a process of spontaneous involution may take place, the entire tumour rapidly disappearing, either leaving no trace or at most a slight scar. During this stage a nauseous, peculiar, and repulsive odour exhales from the surface; in Blanc's case this was noticed to proceed specially from the hands and feet.[1]

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[1] Hallopeau, Congrès International de Dermatologie, 1889, *Comptes Rendus*, p. 528.

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[1] Funk, "Clinical Studies on Sarcomata of the Skin," *Brit. Journ. of Derm.*, vol. i. p. 183.

All the three phases described may be seen at the same time on the body when the disease is fully developed. Though at first the health suffers little, if at all, it eventually fails; the patient loses flesh, becomes short of breath, and weak; a condition resembling septicæmia declares itself, with an irregular febrile movement, and death results by exhaustion, the end being frequently ushered in by uncontrollable diarrhœa. Though the disease is met with in both sexes, it occurs more particularly in men,—according to Tilden, indeed more than three times as frequently; and while it has been seen in early manhood, it shows a special tendency to develop in late adult life. Not only is there extant no example in proof of its possible contagiousness, but there is no instance of its having affected more than one member of the same family, and as a rule the antecedents of those attacked have been good, both as regards themselves and their ancestors. The blood in some cases has been found to contain an excess of white corpuscles, but in other equally typical instances no change of this nature has been established.

There appears to be another form of the disease in which the stage of tumours is reached at once, no erythrodermia or any species of generally diffused skin affection preceding their eruption. There are thus two distinct types.

Mrs N., aged 38, a native of Aberdeenshire, was sent to me by Dr Fergusson of Banff, and was admitted into Ward 38 in the Royal Infirmary on October 6th, 1892. During all her life she had never been further from her home than Carlisle. Her mother, who is 83, still enjoys good health; her father is 81, is rather deaf, and though scarcely so strong as her mother, is able to go about. Her mother was first married to a missionary, and with him spent some time in Jamaica; to him she had two children, both alive and in good health. To her present husband she has had six children; one died in infancy, the others are living and well; the patient is the youngest. Mrs N. married eleven years since; her husband is a robust man, engaged in business as a grocer. She has had three children, aged 10, 8, and 6 respectively. Up till the time when the present ailment commenced she has never had any illness. A photograph taken just before her marriage showed her as a pleasant-looking woman, to appearance well nourished.

The disease began about three years ago as a spot on the cheek under the left eye. This was red, itched considerably, was of no great size, but secreted a small quantity of a serous fluid, and, as far as could be gathered from her description, was of an eczematous type. She attributed it at the time to her having been overheated shortly before. In no long time after, several small vesicating spots appeared on the left side of the chin, and thence onward she seems never to have been entirely free from eruptions of a like character, the arms and the ankles being the parts in succession attacked. It is, however, only a year since any "lumps" showed themselves, which were earliest noticed on the shoulders. In January 1892 she came under Dr Fergusson's care, and was at that time taking arsenic, at the advice of a doctor whom she had consulted. There were then large partly ulcerated swellings on either hip and on the shoulder, which resembled gummata, but no history or suspicion of syphilis could be elicited. With that idea, notwithstanding, iodide of potassium and perchloride of mercury were given; apparent amendment ensued, and when this lagged the dose of the iodide was increased, till ultimately, for ten days before it was stopped, she took half-drachm doses three times a day. It then exhibited a tendency to upset the stomach, while no advantage could be any longer traced to it. This was in the beginning of April, and the nodules had extended to the neck and face. In May she had an illness presenting all the symptoms of rheumatic fever in a severe form, and lasting six weeks; for this salicin was prescribed. Since then she has never been quite free from pains, which she calls rheumatic. From the time of her illness the eruption has made rapid strides; some of the earlier lumps, however, have quite disappeared. They grew to a certain size, occasionally a very large one, then gradually shrunk till they became totally absorbed. She became progressively weaker, and latterly her evening temperature was frequently 102°.

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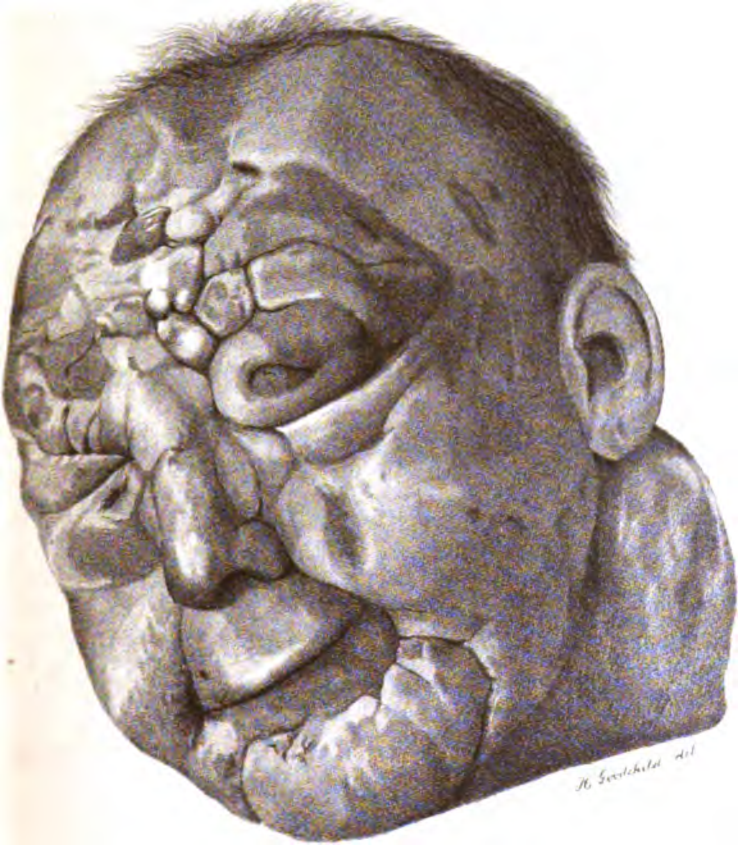
[1] *Journ. of Cut. and Ven. Dis.*, 1888, p. 259.

On admission, the first thing which struck one on approaching the bed was the peculiarly offensive odour which exhaled from the body,—this, indeed, combined with the terribly repulsive appearance she presented, made all the other occupants of the ward sick; the second, the resemblance to an advanced case of tubercular leprosy exhibited by the face. But this similarity ceased to attract one on more close inspection. The ears were then seen to be little if at all affected; the hue of the nodosities, which rendered the features all but totally unrecognisable, was paler than that of the leprous tubercles, and there was no anæsthesia. The various stages of the disease as above described were well marked on different parts of the body. On the chest and abdomen, the condition, if viewed alone, would have been indistinguishable from a very superficial erythematous eczema. There were red, dry, scarcely if at all elevated, ill-defined patches, some a little scaly, but there were no nodules. On the shoulders were brownish or pinkish red areas, feeling thickened if pinched up. These had a faintly glistening surface when viewed by oblique light, and were, in fact, not altogether unlike plaques of the small-patterned lichen planus, but without scales. Some of these patches presented prominences approaching in character to the nodular type, especially over the inner edge of the scapula and on the tip of the shoulder. The scanty hair still remaining on the scalp was short,



MYCOSIS FUNGOIDES

W. CATHIE LITH

dry, and woolly; the eyebrows were denuded, and the eyelashes gone. There were flat, hardish, rather scaly nodules on the vertex and upper part of the forehead. The forehead showed much of the leonine aspect; it was entirely, as was the face, covered with smooth excrescences and nodules of a soft consistency, pale pinkish in colour, between which lay deep furrows, specially marked over the eyebrows and at the root of the nose. The face, indeed, seemed as if plastered over with bodies like pale tomatoes. Tumours had formed on the eyelids, and these were crusted in the centre, so that it appeared as if the eyeball had been transformed into a blackened mass, but on separating the lids the conjunctivæ were seen to be unaffected, while the sight was unimpaired, though the lids could not be opened save with much difficulty, and but very little. A discharge exuded from the nodosities and between them, drying up into honey-like crusts, tinged here and there with blood. On the left side of the neck, under the ear, there was a particularly large nodule, half the size of an apple, soft to palpation, and having a blackish scab in the centre. Scattered irregularly over the limbs were a few nodules of various size. On the backs of the hands, the dorsum of the feet, the wrists, and ankles were closely approximated growths, all more or less rounded on their surface. There were some blisters under the thick epidermis of the palms. The eruption itched intensely, and consequently the prominences were torn and excoriated. The nails were little altered, though at their free extremities and sides they bled easily. The lymphatic glands were not perceptibly enlarged.

The first sound of the heart was impure, almost approaching to a slight systolic bruit, heard most markedly over the apex; the second sound was normal. The blood, when examined, showed no increase in the proportion of white corpuscles, but there were an excessive number of microcytes. The pulse was weak and rapid, sometimes extremely so. She felt very sensitive to cold. The voice was husky. She had some cough, which was at times very troublesome, but there were only slight traces of bronchitis, and no dulness posteriorly on percussion. There were some nodules inside the lips, on the tongue and buccal surface. The appetite was fair, the bowels regular. The urine was loaded with lithates, but contained neither sugar, albumen, nor blood. She was in a very emaciated condition.

She was ordered a warm boracic bath once a day, and while the greater part of the surface was dusted with stearate of zinc, an iodoform ointment was applied to those portions which had raw and denuded areas. A nourishing diet was prescribed, and four minims of the Liq. arsenici hydrochlorici thrice a day. The effect of the baths was to remove, in great measure, the offensive odour, but the crusting from the exudation readily and speedily reformed. The tumours, however, certainly shrunk a little, while the itching quite perceptibly diminished. At the same time a few fresh nodules came out. These were chiefly primary,—at least they did not form on places eczematous at the time. On October 13th diarrhœa set in. The arsenic was at once discontinued, various astringents prescribed, with a milk diet. The diarrhœa persisting, on the night of the 14th she had delusions, and on the succeeding two days her remarks were incoherent. She became so restless and violent on the 17th, that full doses of chloral and bromide were given, with the effect of procuring sleep. In spite of remedies the diarrhœa continued, and she died of exhaustion at 10·45 P.M. on the 19th. Many of the tumours had shrunk to small proportions; the œdema of which much of their mass consisted had become absorbed, but none had absolutely disappeared, while she still scratched to some extent to the last. The course of the temperature while in the Infirmary was extremely erratic. It presented on the whole the septicæmic type. Only once was it normal, on the morning of the 10th of October; while it was highest at 4 P.M. on the 19th, the day of her death, falling a little before the end. Its limit was 103°·8.

Shortly after her admission a portion of a tumour on the nape of the neck was removed, with the patient's permission. Of this one part was at once placed in absolute alcohol, another in corrosive sublimate solution, and from both preparations were made in the laboratory of the Royal College of Physicians. No micro-organisms whatever were found in those stained specially for the purpose. Sections stained with hæmatoxylin and eosin presented the following characters:—The horny layer of the epidermis, stained red, was of extreme tenuity. The interpapillary cones of the rete mucosum were obliterated, but it was otherwise unchanged. Beneath this, and extending as far as the limits of the section, were cells, set principally irregularly, in a structureless meshwork. Through the growth large blood channels ran, piercing it in many places. The largest of these at least had a distinct wall, embedded in which at intervals were oval nuclei containing minute stained granules, but no obvious nucleolus. The cells which made up the growth were of three kinds. A few were oval or elongated cells. Most were round cells, some slightly larger, some rather smaller than a red blood-corpuscle, some with, some without an apparent nucleus; these took on the purple stain freely, and many of them closely resembled those met with in a round-celled sarcoma. Besides these there were cells some three or four times as large, which, when examined with Leitz's pantachromatic oil immersion, were seen on the whole to be round. Some contained numerous stained granules, either scattered throughout their protoplasm, or aggregated with a degree of regularity towards the periphery of the cell. In some there was one nucleus, in others the nucleus had broken up and exhibited mitotic figures.

For the following account of the sectio and the pathological and histological appearances I am indebted to Dr R. F. C. Leith, Pathologist to the Royal Infirmary, who has taken a deep interest in the case throughout, and has devoted extreme care to the examination. Dr Leith says:—

"Body much emaciated. The skin shows a growth of varying character,—flat patches, tubercles, and tumours being irregularly distributed over the greater part of the body. The face is most extensively affected; and while few of the tumours reach a size larger than a hazel nut, there is scarcely an inch of surface which is not in some degree affected. The chin and left side of the neck are nearly in a similar condition, and below the left ear there is a large tumour about the size of a pigeon's egg, with a superficially ulcerated and fungoid-looking surface. The hands and feet are more affected than the limbs, the posterior more than the anterior part of the trunk. The largest tumour is on the front of the left thigh; it is about the size of an orange, and presents the same ulcerated and fungoid appearance as that in the neck. The smaller patches and tubercles are not ulcerated, but desquamating epithelium is seen on some. All of them are discoloured, showing varying tints of red, brown, and purple. The ulcers are all superficial, and are largest where the tumour growth is most luxuriant. A section was made through the tumour in the neck. It showed a pale, almost white, firm surface, and a general sarcomatous appearance. It apparently occupied the dermis and subcutaneous tissue, not encroaching upon the muscles beneath. The epidermis was present at the margin, but destroyed over the rest of the tumour.

"The heart weighed 8½ ounces, lungs 44½, liver 56, kidneys 12, brain 37 ounces. No abnormal appearance was seen in any of these organs, except marked and diffuse fatty degeneration of the heart and liver.

"The lymphatic and intestinal glands and suprarenal bodies were apparently healthy. The right vocal cord showed anteriorly a slight superficial ulceration, but beyond a slight general tumefaction the mucous membrane of the larynx and epiglottis seemed healthy. The right half of the thyroid body was about four times larger than the left, but on section showed merely the characters of a small cystic goitre.

"*Histological Examination.*

"A portion of the large tumour in the neck was removed, including its margin, and placed in corrosive sublimate. Sections were cut in paraffin and stained with hæmatoxylin, rubin and orange, eosin, Biondi, etc.

"A. *The Epidermis.*—It is seen at the margins only. Beyond a slight exaggeration of the interpapillary processes it shows no change.

"B. *The Dermis.*—The normal structure is replaced by a cellular tissue, in which portions of fibrous tissue, muscular tissue (deeper in), sweat ducts, and many bloodvessels are to be seen. At the margins the cellular tissue is irregularly distributed, a large area being seen immediately beneath the epidermis, another some distance below it, while the intervening dermis is affected to a much less extent. At the centre the infiltration is much more extensive and uniform, and in its deeper part scattered bands of striped muscle are seen (platysma myoides ?). The constituents of the growth are as follows:—

"1. Cells.—(*a.*) Round cells somewhat larger than a red blood-corpuscle, with a single nucleus, spherical or nearly so, and a thin rim of homogeneous protoplasm. In most, a single obvious nucleolus is present, sometimes two or three. These cells are present in very large numbers, and are not only the most numerous, but the most characteristic cells of the tumour. (*b.*) Small round cells like lymphocytes, with a more deeply stained nucleus. These are most numerous round the large bloodvessels near the surface. (*c.*) Large cells, round or somewhat irregular, with considerable protoplasm, mostly hyaline, and a single nucleus, sometimes resembling that of *a*, sometimes that of *b*. In a few cases there were two nuclei. These large cells varied considerably in number and distribution, several microscopic fields failing to show more than one or two, while others showed many. (*d.*) Spindle-shaped cells of two or more sizes, the smaller (two or three times the size of a red blood-corpuscle), with large oval nuclei, are arranged close to the walls of the bloodvessels and the pre-existing fibrous tissue of the part; the larger, also with large oval nuclei, lie on the reticulum of the stroma, and have no relation to the bloodvessels. These cells are sometimes branched, and have a faintly granular protoplasm.

"2. Stroma.—The tumour has a distinct stroma, in the form of a delicate reticulum of fine fibres. This is everywhere existent, forming a fine meshwork, the spaces of which contain the round cells, while the larger spindle cells clasp its walls. The intercellular substance, except an indefinite granular one in places, exists between the round cells. Fragments of the pre-existing fibrous tissue are also to be seen.

"3. Bloodvessels.—These are numerous and large, especially towards the surface, some being the pre-existing bloodvessels of the part, recognised by their walls; while the great majority are of new formation, having for the most part distinct walls composed of endothelial cells, and in some cases also of fibres. The finest vessels lie in the walls of the reticulum, and have no well-defined wall.

"4. The fat cells normally present in the subcutaneous tissue have disappeared.

"5. Portions of sweat ducts are visible, and are normal.

"6. Micro-organisms.—The sections were treated by Gram's, Kühne's, Loeffler's, Weigert's, and Ehrlich's methods, and examined most carefully with a Zeiss one-twelfth oil immersion, and no trace of any organism could be found.

"C. *The Internal Organs*—lungs, liver, etc.—also gave negative results.

"*Nature of the Tumour.*—I am strongly inclined," adds Dr Leith, "to regard it as a sarcoma. Both the histological and naked-eye characters support this view, which, on the other hand, is strongly opposed by the absence of any metastatic growth in any of the internal organs, and to a certain extent also by its clinical history. The chief cell here seen (*a.*) has, to my mind, the characters of a sarcomatous cell, especially at the margins of the growth, where it may be seen invading the pre-existing fibres in advance of any other cell, and in many cases far in advance of any bloodvessel. The leucocytes are in this situation few in number, while they are very numerous in the neighbourhood of the large bloodvessels just below the surface. The primary irritant seems to me to be carried by these sarcomatous cells and not by the bloodvessels. From this view, then, the tumour is to be regarded as a slowly growing lympho-sarcoma."

As regards the nature of this disease, light may be thrown on it from two sources,—one the relationships, real or apparent, existing between it and complaints resembling it in clinical phenomena, the other from the pathological side. Possessing some features in common with mycosis fungoides is the curious ailment known as "button scurvy," a disorder said to be peculiar to Ireland. Hirsch[1] gives the following account of it:—"Having been usually preceded for a longer or shorter period by an intense itching of the skin, coming on particularly at night, the disease is ushered in by an outbreak of small round spots, which gradually raise themselves above the skin, and grow into tumours in size from a pea to a nut. The colour of these tumours is at first dark red, but becomes paler, the epidermis over them growing at the same time thinner and thinner, and finally disappearing altogether. A granulating surface now protrudes and secretes a serous fluid, which becomes a dry crust on the summit of the tumour, and is quickly reproduced if it be taken off. The excrescence is elastic to the feel, and somewhat painful on pressure; the skin around it shows no kind of morbid alteration. There may be from one to fifty such nodules. The palms and inner sides of the thighs and arms are the favourite seats. When the tumours have lasted some time, they begin to shrivel, the scabs fall off and disclose a red spot, which shortly assumes the colour of the skin. Only in the event of suppurative disintegration of the tumours, which seems on the whole to be rare, is there a cicatrix formed in the skin. The duration of the malady is usually many months, and it appears to depend as much upon the long persistence of individual nodules as upon recurrences. It is only the exhaustion following a very copiously developed exanthem, or one of long persistence, that makes button scurvy dangerous to the health or life; in the great majority of cases the general well-being appears to have been in nowise affected, and symptoms of constitutional disturbance were never observed. Chiefly met with in the southern counties of Ireland, it would seem now to be extinct; if we are to judge from the silence of Irish practitioners about it at the present day, it was only a true endemic in the interior amidst the country people. There are no doubts among the observers as to its contagiousness, whether by direct means or indirect, more particularly by conveyance of the tumour-secretions by means of articles of clothing."

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[1] "Geog. and Hist. Pathology," *New Syd. Soc. Trans.*, p. 112.

It will be evident that button scurvy differs essentially from mycosis fungoides in two particulars,—in its contagiousness, and in rarely, if ever, proving fatal. The likeness to frambœsia or yaws has been noticed by several writers, most recently by Mr J. Numa Rat.

Such a case as the one just described has a superficial resemblance to lepra tuberosa, but the colour of the nodules is different. There is no anæsthesia, no destructive ulceration; the ears remain to a large extent free from nodules, and the hair of the scalp is denuded to a degree unknown in leprosy.

The form of sarcoma which bears most similarity to mycosis fungoides is that to which attention was first drawn by Kaposi.[1] This tends in a remarkable manner to localize itself primarily, and after a symmetrical fashion, on the extremities. It appears to be limited to the integument for a time, but may, like sarcoma generally, invade in the end the internal organs. While it has been met with in children, it ordinarily develops in men belonging to the labouring classes of society, and between the ages of forty and sixty, otherwise strong. The mode of commencement is different in individual instances. Thus in some a species of swelling shows itself on the hands and feet, a hard œdema accompanied by a marked sensation of tension, of itching or pricking, or macules of a reddish brown, or diffusely cyanotic, appear, on which arises progressively a lardaceous infiltration of the integument. On this the characteristic nodules of sarcoma develop, small at the outset, but steadily increasing in size and number. Though occasionally, as in Schwimmer's case,[2] severe pain is complained of, in many the health continues, even after the nodules have extended widely, remarkably good. The tubercles may become absorbed, or even, as in a singular example recorded by Hardaway,[3] "fifteen or sixteen years from the beginning of the disease the patient, a man, continues in good health, the active process has apparently ceased, and the sarcomatous tumours, which were of the alveolar type, have undergone complete involution, leaving merely behind an atrophic condition. He had never had any treatment." Generally, however, after a lapse of some years, a feverish state supervenes, diarrhœa of a bloody character sets in, or there is hæmoptysis, and finally marasmus and death. At the autopsy numerous similar tumours are found in the liver, lung, spleen, etc.

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[1] Hebra and Kaposi, "Diseases of the Skin," *New Syd. Soc. Trans*, vol. iv., p. 236.

[2] *International Atlas of Rare Skin Diseases*, Part II.

[3] *Journal of Cutaneous Diseases*, January 1883 and January 1890.

The result of a comparison based on the clinical aspects is, therefore, that mycosis fungoides presents features which, while in some respects analogous to sarcoma, yet are sufficiently distinct to authorize us to separate it from the sarcomata properly so-called.

There is, however, another disease which in many particulars bears a resemblance to mycosis fungoides, and especially to the case which is the subject of this paper,—this is xeroderma pigmentosum. The features are so well marked and now so well known, that it is merely necessary to allude to those which link the ailments. In xeroderma pigmentosum the primary lesion is an erythema limited to exposed parts, and in all cases affect very specially the hands and face. The erythema is replaced by pigmentation of an intense description, according to some on the identical localities occupied by the erythema, at all events in neighbouring situations. This is succeeded by atrophic changes and the production of telangiectases, and finally by the evolution of some form of new growth. This is in the majority of instances of epitheliomatous nature, but may be sarcomatous, usually melanotic, or papillomatous, or in one example at least the keratosic patch which often precedes the complete development of the neoplasm became a granuloma. Until the malignant tumours attain some size they are limited to the skin, though they eventually burrow deeply, but in no recorded case has there been any metastasis to internal organs, while the general health only fails as a consequence of the final cachexia. We have here a disease confined to the integument, the epidermis and corium, in the greater part of its course, but differing from mycosis fungoides inasmuch as it often affects several members of the same family, and commonly those of the same sex. Though the occurrence of pigmentary changes might have suggested it, there does not appear to have been any examination made of the suprarenal capsules,—at all events no notice of their pathological condition is given.

Observers are pretty well agreed as to the histological structure of the fully developed tumours. The epidermis is thinned, the cones flattened, the bulk of the new growth being made up of cells in general of the lymphoid type, contained in a delicate reticulum. The individual cells vary in shape, are frequently oval, with one or more nuclei. The condition most closely approximates to the granulomata, and this is the view which at present finds most support. The most recent researches into the structure have been made by Phillipson,[1] who has examined not only the fully developed tumours, but also the erythematous macules. In these the intradermic neoplasm is very exactly limited below by a horizontal line, and occupies the papillæ and subpapillary layer. It is easy to determine that the new growth begins in the neighbourhood of the capillaries. He concludes that mycosis fungoides originates in the connective tissue cells, and that the erythematous or eczema-like period is anatomically already the commencement of the granuloma. Paltauf also practically holds the same opinion.[2] He believes that it consists of cellular tissues derived from connective tissue without any antecedent inflammatory process; for cell-emigration, formation of new bloodvessels—at any rate to any extent—and scar tissue are completely absent. The organisms that were found were those characteristic of pyæmia only.

It has been stated that the disease has so far been found to be limited to the skin, but a case quite recently put on record by Dr Pye-Smith[3] forms an exception. This was one presenting premycosic dermatitis. On examination after death, the right adrenal was converted into a large, smooth, white tumour, weighing 4½ ounces, and with no normal structure remaining. The cutaneous growths and that in the adrenal consisted of leucocytes set in a scanty intercellular stroma, more distinct in the adrenal than in the skin. The condition resembled a lymphoma; part was like a round-celled sarcoma. The pathological appearances, in Dr Pye-Smith's opinion, form a link between chronic hypertrophic inflammation and new growth. His case came closer in structure to sarcoma than to other related diseases, yet he regards it as clinically distinct. In Duhring's[4] case some growths corresponding histologically to those in the skin were found on the surface of the bladder, but these occurring on a free mucous surface, like that of the mouth, are perhaps less important than those met with in the adrenal; at the same time the close, though unexplained, connexion existing between the adrenal and the integument must be borne in mind.

If, then, it comes closest to the granulomata (for the idea that it is a species of lymphadenoma is, according to Brocq,[5] who has closely investigated the subject, at the present time, scarcely tenable), what about micro-organisms? The weight of opinion is against their presence. Phillipson could find none. Bacteria have never been found, but Stelwagon and Hatch[6] found micrococci in the tumours between the cells and in the capillaries among the corpuscles, and cultures from the blood and tumours produced similar micrococci. "These were particularly numerous in sections from the fully developed tumours, sparsely distributed among the cells of the corium in sections from the erythematous and scaly skin, but in the skin least affected were seen only in the capillaries." Inoculations into animals have in all cases proved negative, if we except the inoculations made by Hochsinger and Schiff of a staphylococcus, described by them, into a cat. Payne,[1] however, employing the same staining method as Hatch, that of Gram, also saw stained specks, which he, on careful consideration, decided were not micrococci.[2] Virchow, writing before the discovery of the tubercle bacillus by Koch, or that of leprosy by Hansen, while ranking mycosis fungoides with the granulomata, still does not think we are yet justified in uniting it with the persistent forms met with in lupus and lepra. The glandular enlargement occasionally encountered is apparently consecutive to the eczematous eruption or to some irritation of the skin, not to the tumours *per se.* All things considered, mycosis fungoides appears to me to be best regarded provisionally as a distinct disease, though one in some respects approximating, both clinically and histologically, to the granulomata and to the sarcomata. Funk, in his "Clinical Studies on Sarcomata of the Skin,"[3] believes it to be a special species of skin-sarcoma.

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[1] *Annales de Dermatologie et de Syphiligraphie*, 1892, p. 528.
[2] *Brit. Journ. of Dermatology*, 1892, p. 314.
[3] *Clin. Soc. Trans.*, 1892, p. 84.
[4] *Archives of Dermatology*, 1880.
[5] *Traitement des Maladies de la Peau*, Deuxieme ed., 1892, p. 549.
[6] *Journ. of Cutaneous and Genito-Urin. Dis.*, Jan. and Feb. 1892.

At to treatment, if Phillipson's views are correct, excision of the earliest of the new growths could have no beneficial effect, and the reports given as to the influence of drugs are conflicting. Thus in a case under the care of Duhring of Philadelphia,[4] the administration of arsenic and of iodide of potassium seriously aggravated the disease on the several occasions on which they were prescribed; while in Blanc's[5] case arsenic seems to have proved very useful, for the tumours became worse whenever it was discontinued, even for brief periods. Recent observations on the treatment of myxœdema by thyroid juice have taught us "that there are probably other causes besides those we know which act as stimuli to new formations," and Paltauf[6] refers to the influence of chemical substances (pilocarpine, bacterial proteine, etc.) over various nutritive conditions of the organism. He regards mycosis fungoides as the result of some nutritive disturbance, and this seems to me an extremely plausible view, and one which offers promise that this nutritive aberration may very possibly be discovered and remedied.

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[1] *Observations on some rare Diseases of the Skin*, 1889, p. 25.

[2] *Die Krankhaften Geschwulste*, Bd. ii. p. 538.

[3] *British Journal of Dermatology*, March and April 1889.

[4] *Archives of Dermatology*, 1879.

[5] *Journal of Cutaneous and Venereal Diseases*, 1888.

[6] *British Journal of Dermatology*, 1892, p. 315.

V.—CASE OF ILIAC COLOTOMY FOR MALIGNANT DISEASE OF THE RECTUM. PATIENT IN GOOD HEALTH THREE YEARS AFTER THE OPERATION.

By A. G. MILLER, M.D., F.R.C.S. Ed., Lecturer on Clinical Surgery, and Surgeon to the Edinburgh Royal Infirmary.

Case taken from Ward Reports.

R. M'C., æt. 60, admitted 27th November 1889. Complaint, malignant disease of rectum.

History.—A year ago last March (1888) patient began to be troubled with (what he calls) diarrhœa. He had to go to stool two or three times a day. He had been taking his regular food, had had no cold, and did not know any cause for the looseness, which gradually got worse, so that patient had to go oftener. He worked from March to May, after which he stopped. But this did no good. Patient went to a doctor to get treated, but the medicine given did no good. Patient never had bearing-down pains, and when he went to stool something was always passed. Often it was only a little fluid, or substance of the consistence of jelly. After taking medicine he sometimes had lumps in his stool, but these were little bigger than hazel nuts. At other times the fæces were in long round thin pieces, with a streak of blood. For the last five or six months fæces have been flat and broad. There was always a little blood from the beginning, but never much "except at odd times." There was no peculiar colour of the stools. Patient has never been troubled with sickness. He is not much troubled with flatus. His water has troubled him a little for the last few months. He does not retain his water well, but makes it quite freely. This condition "comes and goes."

Patient's wife has had eight children. The first died, a fortnight old, from cause unknown. The second lived. The third and fourth died in childhood from measles and bronchitis. No still-born children or miscarriages. Patient never had any venereal trouble. Patient never drank much.

Present Condition.—Patient has not been able to have the usual motions from medicine given him. The stools passed are bright yellow and fluid, with a little clayey substance. There are no external piles.

Examination per Rectum.—No internal piles. Lower part of rectum somewhat dilated. As the finger is swept round, the prostate is readily felt somewhat enlarged. In the lumen of the gut a hard mass can be felt projecting downwards. There is an opening in this mass which admits the point of the index finger. The mass is firmly attached to the wall of the rectum all round, and is evidently adherent to the surrounding structures, though not absolutely fixed. This mass is situated in the upper part of the rectum, and is just within touch of the finger.

Urine.—No albumen, bile, sugar, or blood.

NOTES.

December 6, 1889.—Mr Miller performed iliac colotomy. Bowel opened on the 10th. Patient did well. Patient went home provided with a truss and plug, to prevent prolapse of bowel.

January 28, 1890.—Examination per rectum. Only change noticeable is less irritation. Artificial anus inclined to contract. Margin notched, and dilated with finger. There is a tendency to formation of a valve or "éperon."

July 1890.—Reported by medical attendant as in excellent health.

September 1890.—Reported himself at hospital. Quite comfortable. Growth not increased appreciably. Small amount of fæces passed per rectum occasionally.

October 1891.—General health fairly good. Patient passes more by rectum than by artificial anus. What comes from rectum is liquid, and contains small masses of fæces. Larger and firmer fæces come from artificial anus. As there was no appearance of an "éperon" or valve of any kind to prevent the fæces passing the fistula and finding their way down to the rectum, Mr Miller tried to produce an "éperon" by stitching the posterior (or further) side of the bowel to the margin of the opening. No union took place (as was to be expected), but a slight projection remained, which seemed to assist the discharge of fæces by the fistulous opening.

June 1892.—Patient revisited hospital. General appearance that of an elderly man in good health. On examining the rectum the new growth was found to be only an inch from the anus. Only slightly tender to the touch; otherwise much the same as formerly. The orifice of the artificial anus had at its umbilical side an excrescence closely resembling an ordinary venous pile. A tendency to prolapse of the bowel during defæcation had also developed. The new growth in the rectum could be felt by passing the finger down the distal portion of bowel from the artificial anus.

January 1893.—Patient came back to hospital in a very depressed condition, the result of a doctor having told him that he was suffering from cancer. Mr Miller, without actually saying that patient had not cancer, reassured him by saying that he had nothing more than he had had for the last three or four years, and that his present condition was much the same as when he was last seen.

Rectal Examination.—Anus normal. Lower two inches of rectum dilated. Upper part of rectum filled by a hard mass, perfectly immovable, and fixed to the pelvis all round. Somewhat posteriorly is a hard prominent ring, which permits the finger to enter and pass up about an inch. There is no feeling of ulceration, though the margins of the ring are very irregular. The rectum contained no fæces, and there was a mere trace of blood on the finger.

After staying a few weeks in hospital patient went home much stronger and better in every way.

REMARKS.

This patient's case demonstrates—

1. That colotomy may prolong life for a considerable period. It is impossible to imagine that this man would be alive now had no operation been performed.
2. That an iliac fæcal fistula is consistent with both comfort and cleanliness.
3. That the establishment of an artificial anus removes irritation from the rectum, even though the distal portion of bowel is not shut off.
4. That the relief and prevention of obstruction facilitates the passage of fæces by the rectum.
5. That so long as there is no great amount of pain, irritation, or discharge, and so long as no important organ or function is interfered with, a person may live for years in comparative health and comfort notwithstanding the existence of a considerable amount of malignant disease.

VI.—CLINICAL LECTURE: ON A CASE OF EPILEPSY PRESENTING SOME PECULIAR FEATURES.

By ALEX. JAMES, M.D., Physician to the Royal Infirmary.

R. J., aged 13, a schoolboy, residing in Edinburgh, was admitted to Ward 30 on January 17th, 1893, complaining of fits, from which he has suffered for the last eighteen months.

History: Family.—He is one of a family of five. His parents are both alive and well, and the only points which seem noteworthy are that his father seems to be a rather nervous man, slightly addicted to alcohol, and that there is a phthisical tendency in the father's family.

History: Personal.—His mother states that he has had no illnesses previous to his present one. We asked if he had had any convulsive attacks in infancy during dentition, but found he had had none.

Present Illness.—Eighteen months ago, when playing in Leith Street, he was knocked down by a passing cab, the shaft striking him on the forehead above the left eye. He states that he was stunned, and that when he came to his senses he found himself in a chemist's shop. He then walked home. This took place on a Thursday. On the morning of the following Saturday he took his first fit, and felt very ill all that day. About a fortnight afterwards he had another fit, and he states that they were occurring at similar intervals till three weeks ago. Since then he has been having a fit every night about ten o'clock, just as he is dropping off to sleep. Last Friday night (January 13th) he had five fits, but he was able to stop three of them by grasping his leg in the manner described below. He describes the fits as follows:—He is made aware that one is coming on by a tickling feeling in the ball of the great toe of the left foot. He cries out directly the tickling comes on, and says he cannot help crying out. He grasps the leg above the knee with both hands as tightly as he can, and often he has got his brother, with whom he sleeps at night, to grasp it too. At times he is able in this way to prevent the tickling passing up the leg, and so to prevent the fit coming on. At other times he is unable to do this; the tickling extends up to his head, and he becomes unconscious, and remembers nothing more till he awakes from sleep some hours afterwards. He has never bitten his tongue, or at least it bears no marks of having been bitten; and he has never observed blood about his mouth or on his pillow in the mornings. From his mother's description, however, we had no doubt from the first that the fits were distinctly epileptic, and since his admission we have had the opportunity of seeing him in several paroxysms, so that we have no doubt upon this point. Let us, however, in the meantime confine ourselves to the phenomena which we met with in his case on his admission.

State on Admission.—Height, 4 ft. 10 in.; weight, 6 st. 9 lbs. He is a well nourished and developed boy, of good muscularity. A small abrasion can be seen about two inches above the left eye, which he says has been there since his accident. His temperature and pulse-rate are normal. His expression is happy and contented, and he has a stammer in his speech, which has, he says, always affected him.

Nervous System.—*Voluntary motor functions* normal.

Skin sensibility to touch, temperature, and the faradic current is normal all over. On the left leg or foot it shows little, if any, difference from the right, the only point worthy of note being that, when testing the sensibility of the sole of the foot by tickling that part, the patient cried out on one or two occasions, and grasped his leg, feeling, as he expressed it, the twitching which is apt to pass into a fit.

Skin Reflexes.—On admission the plantar, cremasteric, epigastric, abdominal, and scapular reflexes were all found to be well marked, —it was thought, on the whole, rather more on the left side.

Deep Reflexes.—The knee-jerk was found distinctly more marked than usual in both legs; and in both ankles, on tapping the tendo Achillis, distinct reflexes could be elicited, and a slight tendency to ankle clonus could be made out. With the deep reflexes, as with the superficial, we were careful to test if any relative increase could be made out on the left side, but we could not altogether satisfy ourselves that it was so. More, however, will be said about this by-and-by.

Another reflex which we examined on his admission was the faucial reflex. As you all know, on tickling the fauces a reflex contraction of the parts results, more or less marked in different individuals. Now, it has been said that this reflex is well marked in epileptics, corresponding to the increased irritability of the nerve centres existing, or supposed to exist, in that disease, and that the reflex irritability of the parts there may be useful as a guide to the efficiency of the bromide of potassium.[1] That is to say, that with the administration of the bromide the number of the fits and the reflex irritability of the fauces will be found to diminish together. Here, then, was a case in which a knowledge of the reflex irritability of the fauces would be specially interesting, for the fits had been becoming more and more frequent, and the patient had not been taking any bromide. On examining into it, however, we found that it was conspicuously absent; as one of our students remarked when this was demonstrated, our patient would make a splendid subject for laryngoscopic examination. This absence of the faucial reflex was, however, quite what I expected. In most cases of epilepsy which I have examined I have found it so, whether the patients have been taking the bromide or not.

Special Senses.—These are all normal. With the ophthalmoscope no abnormality can be discovered in the fundus.

Mental Functions.—These also are normal. His mother states that he is an average boy as regards his school lessons, and that she does not think that he has suffered there from over-pressure. He has a stammer in his speech, but this has been present all his life.

Urinary System.—About 50 oz. daily; acid; sp. gr. 1020; no abnormal constituents.

Such, then, is our case. You will, I think, agree with me in considering that it presents many interesting features. These I now propose to consider in detail, and I shall begin by discussing with you the "aura" of which this case presents so distinct an example. Epileptic auræ may be sensory, motor, special sense, psychical, or visceral, but in this case our only difficulty seems to be to decide whether the aura is sensory or motor. He tells us, as you will remember, that it begins by a tickling sensation in the ball of the left great toe, which spreads up the leg. In this way it might be regarded as a sensory aura. But he tells us—what, indeed, we have had the opportunity of observing since his admission—that it is associated with a twitching and contraction of the muscles of the foot and leg, and so we might believe that it was a motor aura, and that the tickling sensation may be due to muscle rather than cutaneous sensibility. Which of the two it is we cannot well say, but there is no doubt that sensory impressions tend to excite it. It will be remembered that tickling the soles of his feet, so as to test the sensibility or excite the plantar reflex, was found by the clerk who took the case to arouse the aura. Further, although now in our visits to his bedside in the ward we find that acting in this way does not so readily induce the aura sensation, Dr Baines informs me that if at night he awakes our patient and tickles the sole of the foot, especially about the ball of the great toe, the aura sensation is at once induced so strongly that the patient feels that it is only by a timely and firm grasp of his leg that a true paroxysm can be prevented from coming on. It is interesting to remember that many cases presenting similar peculiarities as regards the nature of the aura and the effect of skin irritation in provoking an epileptic paroxysm have been reported. As examples of these, I quote the following from a paper by Dr Ogle:[1]—

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[1] Compare Osler, *Principles and Practice of Medicine*, p. 956.

> A man, aged 21, who had had syphilis, but who had had epilepsy before the syphilis, was having several attacks in the day, and noticed that each attack was preceded by an aura, a sensation as of blood rushing up from the left side of the chest and left arm to the head. Dr Ogle found that suddenly jerking the left arm, or roughly handling the left shoulder, or pinching the skin of those parts, could at once induce an attack. He also observed that to induce an attack a second time, it was necessary that an hour or two should have elapsed after the first one, as if to permit an accumulation of force.

Another case, also reported by Dr Ogle, was that of a boy who had a fatty tumour over the upper part of the right scapula. Whenever the tumour was handled, however lightly, the boy became unconscious, and his body assumed the position of intense episthotonus, this position being maintained for half a minute, or longer if pressure were continued.

These observations remind us at once of the "epileptogenous" areas first discovered and described by Brown-Séquard. As you know, in the case of the guinea pig rendered epileptic artificially —*i.e.*, by section of portions of the spinal cord, etc.—it has been shown that the epileptogenous area is for the most part the skin about the angle of the jaw. What has caused the "epileptogenous area" in our patient to be the skin over the ball of the left great toe we cannot well say. We have tested the parts carefully for any indications of altered sensibility as regards touch, temperature, and the faradic current, also for any indications of altered trophic function, but beyond what has been already described we have discovered nothing.

Next, I wish to say a little as regards the spread of the aura. As already stated, the boy tells us that if he is unable to stop the tickling sensation by firmly grasping the leg, it (the sensation) rapidly passes up to his head, and then he loses consciousness. On questioning, however, more closely, he tells us that after he feels it in his head it seems to pass to his left arm and then to his right arm, after which he knows nothing; and he does not know when his right leg becomes affected.

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[1] *Lancet*, 1874, vol. i. pp. 615 and 651.

Remembering, however, that the aura is simply a part of the epileptic paroxysm, we have obtained further information on this point by observing the sequence of events during the onset and course of a paroxysm. When, for example, he has found that grasping his leg has been of no avail, he lets go his leg with a sort of cry, and we notice that his muscles are all contracted in the so-called tonic stage. We do not get much information from this; but if we watch for the onset of the clonic stage we can discover that it begins first in the legs, then spreads to the arms, and, lastly, to the face. I am therefore disposed to believe that the spread of the epileptic nerve disturbance in this case is the usual one, viz., from the leg to the thigh, then to the opposite limb, then to the arm of the same (left) side, then to that of the opposite (right) side, and lastly to the face and head.

As regards the meaning of the cry, so often present in epilepsy, there is a difference of opinion among physicians. One theory is that it is in a way voluntary, indicating fear or surprise; while another is that it is, like the aura, a part of the fit, and caused by a convulsive contraction of the thorax and narrowing of the glottis. It has been argued against the first theory that patients have no recollection afterwards of having cried out, or experienced fear or surprise; but the upholders of this theory point out that after a paroxysm the patient's memory of its immediate antecedents is apt to be obscured. Probably, however, the other theory is the better,—the associated contraction of the thorax and narrowing of the glottis being the result of the epileptic nerve disturbance involving the phonation centre in the central cortex. In our patient the fits have, since his admission, been usually accompanied by a cry, but he does not seem to remember about this afterwards.

The attacks themselves in this case present no very unusual features. We notice during the tonic stage the powerful, and, as it were, steady contraction of the muscles, the initial pallor of the face, the converging of the eyes, the dilating of the pupils. Then follows the dusky suffusion of the face by the respiratory stoppage, and the clonic stage manifesting itself by the jerking of the limbs, the convulsive twitchings of the muscles of the face, the frothing at the mouth, etc. As compared with average epileptic paroxysms the attacks are not severe ones; he does not bite his tongue, his recovery is rapid, and the flea-bite-like petechial hæmorrhages,—the indications of intense venous congestion,—which one so often finds on the forehead after a paroxysm, have never been seen. Shortly after the fit he passes, however, a large quantity of rather high-coloured urine. On several occasions we have examined this; we found it acid, with a specific gravity of 1022, and clear.

Remembering that temporary albuminuria or glycosuria may follow an epileptic paroxysm, we have tested it for albumen and sugar at those times, but have found none. On adding to it a little caustic potash, however, we have observed that this post-paroxysmal urine shows a distinctly greater cloudiness (phosphates) than the urine passed at other times.

Let me next draw your attention to the fact that in our patient the paroxysms are mainly nocturnal. As you are aware, this is the case with many epileptics; and, as Dr Féré states,[1] this fact has served the upholders of the theory that epilepsy is associated with congestion of the nerve centres, as well as those who believe that it is associated with anæmia, with what they have regarded as evidence,—the partisans of the congestion theory pointing to the prone position, the partisans of the anæmia pointing to the physiological condition of the nerve centres during sleep.

In the case of our patient the attacks, as just stated, came on for the most part during sleep at night, but it is interesting to remember that on one occasion (23rd January), when the nurse, finding him even more mischievous than usual, had sent him to bed, he had between the hours of 4 and 10 P.M. eight attacks of the aura. None of them, however, passed into a regular paroxysm, and, of course, in such circumstances it is impossible to decide how much what is understood as "free will" had to do with their production. It is noteworthy, however, that he has never had a paroxysm when up and going about.

But what is no less interesting is the time of the night at which paroxysms are most apt to occur. Dr Féré, from a great number of cases, has shown in a most interesting manner that their occurrence is most frequent about 9 o'clock at night, or 3, 4, or 5 o'clock in the morning,—that is to say, about the times which follow going to bed or precede getting up. As you will remember, these are precisely the times when sleep is least likely to be profound, and when dreams, the results of partial cerebral activity, are also most frequent. In our patient the fits came on before his admission, as he explained it, just as he was going off to sleep; since his admission they have occurred mostly about 2 or 3 A.M.

In our patient we have further endeavoured to obtain information as regards the state of his nervous system during the intervals, and we have carefully looked for any alterations in this at the period preceding and succeeding a paroxysm. As you can understand, information of this kind would be of great value in helping us to a knowledge of the pathology of epilepsy, and careful investigations of this kind would well repay the trouble. What we have been able to do at present has not been very much; but such as it is, let me now describe it to you.

At certain regular periods, viz., at 10 A.M., 2, 6, and 10 P.M., and at 2 and 6 A.M., and when opportunity offered during the pre- and post-paroxysmal states, we ascertained the pulse-rate, temperature, voluntary muscular power by the dynamometer, the state of the cutaneous and deep reflexes, and the state of the electro-sensibility and electro-contractility to the faradic current in the legs and feet.

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[1] *Les Epilepsies et les Epileptiques*, Dr Ch. Féré, p. 312.

We found the pulse-rate and temperature to show great regularity. No difference in them have been noticed in the pre-paroxysmal stage, but a rise has been noticed in the temperature immediately after the fits. Thus, in one instance when the fit occurred at the usual time, 2 A.M., and when, as his chart shows, the temperature is about its lowest,[1] his temperature was found to be 99° F., pulse 64, and respirations 24; whilst an hour after the temperature was 97°, pulse 88, and respirations 16.

As is known, the voluntary motor power, as ascertained by the dynamometer in the hands, is diminished in the post-paroxysmal stage. Our patient, whilst ordinarily registering 70 R. and 50 L., after the attack usually registers about 45 R. and 35 L.

As regards reflexes,[2] our observations seem to indicate a slight increase in the pre-paroxysmal and diminution in the post-paroxysmal stage, and as regards electro-sensibility and contractility a diminution in the post-paroxysmal stage.

Diagnosis.—On this subject, what we have now to do is to make up our minds whether we are dealing with a case of idiopathic epilepsy,—of an epilepsy in which, supposing we had at present an opportunity of examining the nerve centres, we should find practically nothing to account for it,—or a case in which, as one of the results of the injury, we should find some gross lesion. Remembering that our patient received a severe injury to his head some eighteen months ago, and that his mother dates his epilepsy from this time, and remembering also that each attack begins with a distinct aura in the left foot, we might not unreasonably suppose not only that there existed such a lesion, but that it existed at a certain part of the brain.

I have come to the conclusion that there is no gross lesion, however, for the following reasons:—No trace of injury nor tenderness can be detected on examining the head at any part; and although the aura always begins in the ball of the left foot, a careful examination of the limb shows no alterations—motor, sensory, reflex, or trophic—such as one might expect with a gross lesion. I have also known of other cases in which as distinct a peripheral aura was present as exists in this case, and no gross lesion of the brain was found. He has, further, no headaches nor vomiting, and the examination of his eyes by the ophthalmoscope reveals nothing abnormal. Lastly, epilepsy due to a localized lesion is more frequently a partial than a general one, as is the case with our patient.

[Concerning the value of these two last considerations, let me remind you, however, that we cannot speak very confidently,—more especially since, as many of you will remember, we have had in

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[1] Compare Féré, *Les Epilepsies et les Epileptiques*, p. 313; also Bevan Lewis, *Med. Times and Gazette*, March 1876.

[2] Compare Féré, *ibid.*, p. 157; also Beevor, *Brain*, April 1882.

Ward 30 two cases illustrative of the opposite of this. One was the case of a man, B., who had developed attacks of general epilepsy as the result of a rapidly-growing sarcoma of the left cerebral hemisphere, and in whom repeated ophthalmoscopic examination revealed no changes whatever in the retina. The other was the case of the man, S., admitted for hemiplegia of the right side—face, arm, and leg—and in whom we diagnosed a syphilitic thrombosis in the left internal capsule. This man, shortly after his admission, developed epilepsy, which we recognised as post-hemiplegic, and as being due to the irritation of the area of softening in the internal capsule. Although the lesion was a localized and not a very extensive one, the epilepsy was general. Many other examples could be given, but these are sufficient to demonstrate that the absence of optic nerve changes does not negative the presence of gross cerebral lesions, and that the fact that the epileptic paroxysms are general does not in any way negative the existence of a localized brain lesion.]

But now that we have concluded that there is no gross lesion in this case, what importance are we to assign to the injury in connexion with the causation of the disease? Recognising that an injury such as this boy received must certainly have had a prejudicial effect, I am yet inclined to think that the main factors in the production of his epilepsy have been constitutional ones. In his father's family there is a marked phthisical tendency, and his father seems to be a nervous and irritable man, inclined at times to alcoholism.

Further, the boy's mental organization is certainly not a very sound one. Nurse tells us that she has great difficulty in keeping him out of mischief in the ward, and his mother told me that he has all along at home been in the habit of receiving severe and frequent thrashings from his father. Whether, for such a state of affairs, the nervous organization of the boy or of the father is the more to blame, we need not concern ourselves; we have ample grounds for concluding that our patient is to be regarded as neurotic. Again, we have to remember that the age at which the disease began is that of ordinary idiopathic epilepsy, and, lastly and most important, that there is a distinct history of an "aura" having been observed at a date antecedent to his accident. I am therefore inclined to ascribe his illness mainly to constitutional causes; these in the absence of his injury would probably have produced the epilepsy, whilst the accident, without the constitutional predisposition, would probably have had no such effect.

Prognosis.—Although we may reasonably hope that our patient will live for years, and that periods of freedom from attacks will from time to time show themselves, we cannot but admit that as regards the disease itself we cannot speak very favourably. Had we been able to ascribe it more to injury and less to constitution, we could, of course, have hoped for more from time and care. As you know, frequency rather than severity of paroxysms gives the graver prognosis, and in our patient the attacks, up to the time of his admission, have been increasing in frequency. By many physicians the markedness of the aura is looked upon as favourable; and there is no doubt that when, as in our patient, its occurrence gives an opportunity for arresting the fit, it is a still more favourable sign. Nocturnal attacks are by some regarded as more favourable than diurnal, as being less likely in time to induce that impairment of the intelligence so common in epileptics.

Treatment.—This may be divided into the treatment—(*a*) of the paroxysm, and (*b*) of the interval.

(*a*.) For the paroxysm we provided our patient on his admission with a strap round his left leg above the knee, which he could tighten when he felt the aura. He has discarded this, however, as he says that he has discovered that he can do better by grasping the leg tightly with his hands. If a scientific explanation were asked for this, it might be said that powerfully grasping his leg has a derivative effect on the nerve force which is being generated, and prevents an explosion of epilepsy; just as firmly grasping the arms of the dentist's chair has a derivative effect on the nerve force generated by a painful tooth-extraction, and prevents explosions of other kinds.

[Such modes of arresting a fit are not uncommon. Forced flexion, forced extension or twisting of a limb, pinching a finger or toe, or the skin of the ear, etc., have all been found in certain cases to act more or less efficiently.]

In such a case the nitrite of amyl inhalation might be tried when the aura is felt, but hitherto we have not used it.

The attack having recurred, we let him work through it. We do not require to put any protecting body between his jaws, as he does not bite his tongue, and we let him sleep after the fit, recognising that its occurrence means exhaustion of the nerve centres, and a need for rest.

(*b*.) In the intervals he has been taking the bromide of potassium in 20 gr. doses thrice daily, and the result is that the fits are much less frequent. We propose in the meantime to continue this.

VII.—NOTE ON THE BACTERIOLOGICAL EXAMINATION OF AN ARTESIAN WELL AT DUMFRIES.

By ALEXANDER C. HOUSTON, M.B., D.Sc., Edinburgh.

THE year before last the Trustees and Directors of the Crichton Royal Institution at Dumfries sunk on their property an artesian well, which yields a large supply of water. The total depth of the bore is 452 feet, and it passes first through 2½ feet of black soil, then through 17 feet of sand and gravel, then through 407½ feet of conglomerate rock, and lastly through 25 feet of sandstone. The upper end of the tube projects into a large tank, formed of concrete and lined with white glazed tiles, and it discharges 75 gallons of water per minute into this tank. The overflow from the tank is at a higher level than the supply-mouth of the tube. When another tube is screwed on, it is found that the water rises to a height of 6½ feet above the ground level (see Diagram 1).

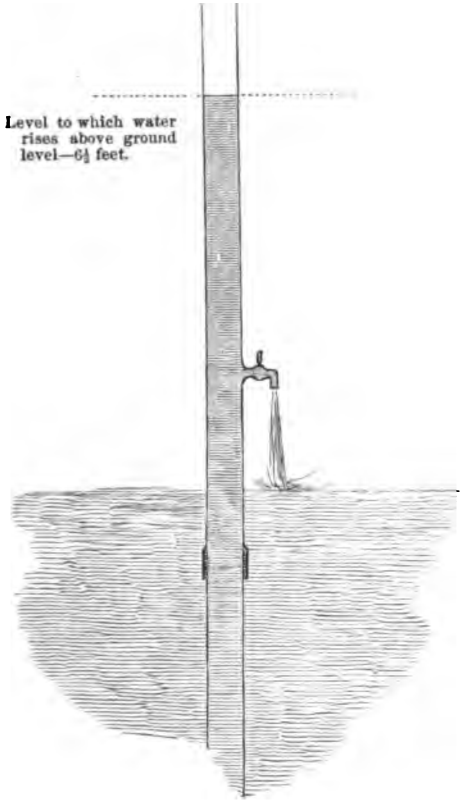

DIAGRAM 1. (Not drawn to scale.)

The water is pumped from the tank to a high-level reservoir, which enables a constant pressure to be maintained in the pipes connected with the buildings of the Institution.

In the bacteriological examination of the water of this well two sets of experiments were made, the first on the 21st of July 1892, and the second on the 6th and 7th of October 1892. On both occasions the water discharged from the house-pipes was examined, as well as the water coming directly from the well. For the first set of experiments the water from the artesian well was obtained by fitting on an extra piece of tube to the tube already sunk in the bore, and then taking a sample of water from a stopcock at the side (see Diagram 1). For the second set of experiments the water in the tank was pumped down so as to reduce its level below the opening of the discharging tube, and a sample of the water was then taken direct from the bore by means of a sterilized pipette (see Diagram 2). In order to prevent the multiplication of any

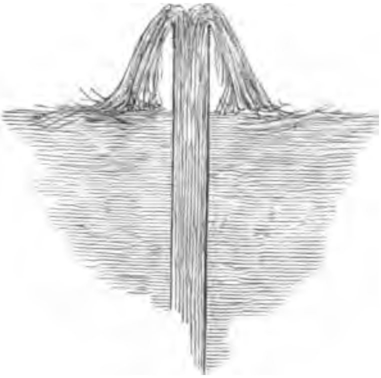

DIAGRAM 2. (Not drawn to scale.)

micro-organisms that might be in the water, the preliminary part of the investigation, viz., fixing the germs in nutrient gelatin, was performed at once on the spot.

(1.) Water from the house pipes.

(*a.*) 21st July 1892.—The mean of seven experiments gave 37·564 germs in 1 cubic centimetre, or 2·521 germs in 1 drop of the water.

(*b.*) 7th October 1892.—The mean of seven experiments gave 27·003 germs in 1 cubic centimetre, or 1·84 germs in 1 drop of the water.

The temperature of the water on both dates was 11·5° C., or 52·7° F. The mean of the two foregoing sets of experiments is, 32·283 germs in 1 cubic centimetre, or 2·18 germs in 1 drop of the water. Fraenkel, a high authority on this subject, considers that 150 to 200 germs in 1 cubic centimetre is a limit which should not be exceeded in filtered aqueduct water.[1] The water delivered into the buildings of the Crichton Institution may therefore be regarded as a very pure water from a bacteriological point of view.

(2.) Water direct from the artesian well.

(*a.*) 21st July 1892.—The water, as has been already stated, was obtained by fitting on an extra piece of tube to the discharging tube, and then taking a sample of water from a stopcock at the side (see Diagram 1). The mean of eleven experiments gave 16·360 germs in 1 cubic centimetre, or 1·112 germs in 1 drop of the water.

(*b.*) 6th October 1892.—The water was obtained direct from the bore (see Diagram 2). The mean of seventeen experiments gave 0·472 germs in 1 cubic centimetre, or 0·031 germs in 1 drop of the water.

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[1] Fraenkel's *Text-Book of Bacteriology*, page 356.

The temperature of the water at the well on both dates was the same, viz., 11° C., or 51·8° F. The temperature of the water of the river Nith, which runs not far from the well, was 8·5° C., or 47·5° F. In artesian wells the temperature of the water usually rises 1° F. for every 40 to 50 feet of depth.

The results of these two sets of experiments point to a water of great bacteriological purity. The results of the second set of experiments, indeed, disclose a water which is practically sterile.

Table of the results of the above Experiments.

	Description of Water.	Number of Experiments.	Average Number of Germs in 1 Cubic Centimetre of Water.	Average Number of Germs in 1 Drop of Water.
(1.)	(*a.*) 21st July 1892.—House water as delivered into the buildings of the Institution, . . .	7	37·564	2·521
	(*b.*) 7th October 1892.—House water as delivered into the buildings of the Institution, . . .	7	27·003	1·840
	Mean of the above two sets of experiments, .	14	32·283	2·180
(2.)	(*a.*) 21st July 1892.—Artesian well water obtained in the way referred to in the text (see Diagram 1),	11	16·360	1·112
	(*b.*) 6th October 1892.—Artesian well water obtained direct from the bore (see Diagram 2), . . .	17	0·4727	0·0317

It appears from these experiments that the water issuing from the artesian well contained scarcely any germs, so few that it might practically be called sterile; but in its passage to the high-level reservoir, and thence to the buildings of the Institution, it became considerably altered in its biological characters. When it was drawn from the taps of the Institution, it contained an average of 32·283 germs in 1 cubic centimetre. The micro-organisms identified were similar in character to those usually found in drinking waters, and included Bacillus violaceus, Micrococcus flavus liquefaciens, Bacillus fluorescens liquefaciens, Bacillus subtilis, and Mould fungi (Mucorinæ, Penicillia, and Aspergilli). There were no pathogenic organisms found in the water. For the cultivations a modification of Von Esmarch's process of making gelatin roll cultures, described in the *Edinburgh Medical Journal* for December 1892, was used instead of Koch's plate method.

VIII.—STUDIES IN FŒTAL PATHOLOGY AND TERATOLOGY.

(SECOND SERIES.)

I. ALLANTOIDO-ANGIOPAGOUS TWINS—DESCRIPTION OF A FŒTUS PARACEPHALUS DIPUS ACARDIACUS.

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(Read before the Obstetrical Society of Edinburgh, 12*th December* 1892.)

THE interior of the pregnant uterus may be regarded as the laboratory in which Nature prosecutes her most intricate pathological experiments. The altogether peculiar conditions under which the fœtus in utero exists permit the occurrence of diseases and deformities so grave as to be absolutely incompatible with extra-uterine life. When, however, the uterus contains a single fœtus, there are limits assigned to the pathological changes in structure and function that can be produced; but when there are twins in utero, when these are contained in the same chorionic sac and nourished by a single placenta, and when, moreover, they are of the allantoido-angiopagous variety, there seems to be practically no degree of deformity too great for Nature to reach. Monstrosity is kept within bounds in the autosite, but it is to all intents and purposes limitless in the omphalosite and parasite. Anencephalus, exomphalos, phocomelus, and cyclopia are indeed malformations of a gross character; but they pale into comparative insignificance when placed alongside of the lesions met with in the deformed fœtus that is dependent for its growth and development upon the placenta of its brother or sister. It is with monochorionic twins that Nature is able to produce her most startling results.

The presence in utero of two fœtuses, both supplied with nourishment from a single placenta, makes possible the occurrence of such grotesque, bizarre, and extraordinary aberrant forms as the acephalic, acormic, acardiac, amorphic, and anidean fœtus. In some of these productions, which well deserve the name of monstrosities, the human form is nearly lost, whilst in others it may safely be said to be entirely wanting; but the specimen about to be described, although markedly deformed, has yet the semblance of the infantile form, and belongs to the least monstrous variety of allantoido-angiopagous twins—that, namely, which has been called paracephalian or paracephalic.

It may be well to indicate briefly the place in a scheme of classification which allantoido-angiopagous fœtuses occupy. According to Taruffi, whose nomenclature and method of arrangement I have principally followed, all malformed fœtuses may be divided into two great sections—the *terata monosomata* and the *terata polysomata* (the single and the double or triple monsters). By far the larger of the two subsections of the terata polysomata contains the *disomata* or double monsters. The disomata, again, are subdivided into two groups—the *d. dierita* and the *d. synerita.* In the former group the bodies of the two fœtuses are not immediately united, whilst in the latter there is a direct and close union between them: there is diæresis in the one case, synæresis in the other. The synæretic disomata are usually known as the double or composite monsters, and they comprise such forms as the syncephalic, dicephalic, thoracopagous, and melomelous; but with them we have not at present to deal. The diæretic disomata have been arranged by Taruffi in two groups, one of which contains the *monochorionic disomata,* and the other the *omphalo-angiopagous disomata.* The former have also been called homologous twins (Ahlfeld), and they have been defined as normally formed twins of the same sex enclosed within one chorion, and drawing their nourishment from a single placenta. Whether or not these fœtuses ought to be considered as teratological is doubtful (the question will be considered later, when I shall have described a specimen of this kind); but there can be no hesitation in placing the members of the second group—the omphalo-angiopagous twins—among the monstrosities. The disomata omphalo-angiopagi have been defined as *twins of the same sex enclosed within a single chorion, one of which shows more or less grave developmental defects, and communicates with the other by means of the vessels of the umbilical cord in the neighbourhood of the placenta.*

Taruffi has subdivided the disomata omphalo-angiopagi[1] into the following varieties:—

I. Paracephalus.
    1. Dipus.
        A. Cardiacus.
        B. Acardiacus.
    2. Apus.
    3. Pseudo-acormus.
II. Acephalus.
    1. Thorus.
        A. Cardiacus.
        B. Acardiacus.
    2. Athorus.
    3. Pseudo-acormus.
III. Amorphus.
    1. Mylacephalus.
    2. Anideus.

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[1] Professor Simpson has pointed out that to English ears the term "omphalo" is somewhat misleading, as it suggests a connexion with the omphalo-mesenteric vessels. I therefore adopt the term "allantoido-angiopagous" as more etymologically correct.

The paracephalic twin has more or less defective limbs and head, and sometimes it has neither the lower extremities nor the trunk; in some cases it is provided with a heart, in others this is wanting. In the case of the acephalic fœtus the head and neck, and sometimes a portion of the trunk, are absent; the heart is usually, but not invariably, absent. The fœtus amorphus has not the external appearances proper to the infant. In the paracephali the deformity affects chiefly the lower part of the body, in the acephali the upper.

Historical Notes.—It may be well briefly to sketch the growth of correct views concerning the nature of allantoido-angiopagous twins and their place in a teratological classification. This will be best accomplished by making a survey of the more important communications and descriptions that have been given of this form of monstrosity by various writers.

The first undoubted specimen of a deformed twin was described about the middle of the fifteenth century, for we must leave out of account as of little scientific value the statement of Ctesias, the historian, that Roxana, the wife of Cambyses, gave birth to a headless infant (400 B.C.). Taruffi has found in the Royal Library of Bologna an unpublished manuscript giving a history of that town between the years 1340 and 1453, and containing the following statement with regard to a malformed fœtus:—"In the city of Bologna there was a woman who gave birth to two creatures—one was a male, and had all the limbs; then she gave birth to one without a head, arms, and legs, with the umbilicus and with a few hairs where the neck should have been; it had a small opening which showed that it was a female, it was half a cubit in length, and remained alive for nearly three hours." From the description, and from the sketch which accompanied it, this was evidently a true example of an acephalic fœtus. The date of the observation is 1431, but the writer's name is unknown.

During the next two hundred years no fresh case seems to have been reported, for although both Ambrose Paré and Aldrovandi spoke of headless creatures, they referred rather to the mythical acephalous people of Africa and to fœtuses which they believed to be like them, but which were really instances of anencephaly. The confusion so early introduced between the fœtus without a brain and that without a head has persisted almost to the present time, and has greatly checked the growth of correct views concerning both the anencephali and the acephali.

Soon after the middle of the seventeenth century several acephalic fœtuses were described by Everard, Lankisch, Marco, and Schelhammer. These writers noted the absence of the heart in their specimens, and thus aroused the suspicions of the scientists of the day, who could not understand how a fœtus could be developed without a heart, for the importance of the statement made by Lankisch and the others, that each of these malformed infants was born along with a healthy twin, was entirely overlooked. One conclusion, however, of no little value was drawn from the study of such cases, and this was, that since a headless fœtus cannot receive nourishment through the mouth, it must get it by some other channel, viz., through the umbilical vessels.

Two specimens of paracephalus were described towards the close of the seventeenth century, the one by Jaenis in 1681, and the other by Göller in 1684; and in 1697 Vallisneri put on record an anidean monster. Of course these authors did not give the above names to their specimens, for the term paracephalus was first used by Saint-Hilaire more than a hundred years later; Göller, for instance, described his case simply as a "monstrous human abortion."

During the eighteenth century many malformed fœtuses, which we can now recognise as allantoido-angiopagous in nature, were described; but whilst the teratologists of the time busied themselves with theories as to the possible means of nutrition and circulation in such acardiac monstrosities, they seem strangely enough to have overlooked the important facts observed by Pujol (1706) and Mery (1720) in two acardiac twins. Both these writers examined the placentæ and umbilical cords of the twin fœtuses, and recognised that, whilst the placenta in each case was single, there was a vascular connexion between the cord of the normal and that of the deformed twin. Pujol and Mery were in advance of the knowledge of their time, and it was not till long afterwards that the two important facts insisted upon by them (the plural character of such births, and the vascular connexion between the umbilical vessels) were recognised. Indeed, both in the last century and in this, the clinical history of the case and the examination of the after-birth have seldom been dwelt upon by the writers who have described malformed twins. In 1784 Sandifort collected together a considerable number of recorded cases of acephalic and acardiac fœtuses, and drew certain deductions therefrom; but his observations, unfortunately, led him to the conclusion that the acephali were closely allied to the brainless fœtuses (anencephali). This conclusion had unhappy results, for it led to the placing of the acephali among the single monsters and in the same genus with the anencephalic fœtuses. Sandifort's erroneous mode of classifying the acephali with the anencephali was not abandoned till quite recent times (1865), when Förster placed them with the dwarfs, and considered them as instances of defective development of the whole body.

During the present century several attempts have been made to arrange the various specimens of deformed twins in separate groups. Breschet in 1821 adopted three subdivisions: the first contained fœtuses wanting only the head (acephali); the second, those wanting both head and thorax (acephalo-thori); and the third, those in which head, thorax, and abdomen were absent (acephalo-gastri). It will be seen that no place was found in

Breschet's scheme for the twin-fœtus with a more or less defective head. Elben, writing in the same year as Breschet, did much to fix the opinions of German medical men with regard to malformed twin-fœtuses, and the influence of his views is still to be seen in the teratological works of Förster and Ahlfeld. Elben found, from an examination of the literature of the subject, that in nearly every recorded case the heart was absent, and he saw in the absence of the heart a general character for not only the acephalic, but for the mylacephalic and anidean fœtuses also. On this account the term acardiac came to be commonly employed in Germany as a general one for the whole group of malformed twin-fœtuses, so that Förster in 1861 spoke of three varieties of the acardiaci—(1), the amorphi; (2), the acephali; and (3), the acormi.

Whilst, however, Elben's views were favourably received in Germany, by French teratologists they were scarcely at all accepted. Isidore Geoffroy Saint-Hilaire (1836) noted that the acephali were not invariably acardiac, and that acardiac fœtuses were sometimes provided with a head. Elben's classification made no provision for such specimens, and Saint-Hilaire proposed, therefore, to use the more or less deformed state of the head as a means of arrangement. He placed all these malformed twins amongst the single monsters (monstres unitaires), and formed with them the second order, that of the Omphalosites. He recognised three tribes of omphalosites: the first contained fœtuses showing some degree of cephalic defect (paracephali); the second, those without a head (acephali); and the third, those with a rounded form, and without any external human appearances (anideans). The following abbreviated scheme will show the place given by Saint-Hilaire to deformed twins:—

Monstrosities.

- Class I.—Single monsters (monstres unitaires).
  - Order I.—Autosites.
    - Ectromelic, symelic, exencephalic, anencephalic, cyclocephalic, etc.
  - Order II.—Omphalosites.
    - Tribe 1.
      - Family 1. Paracephali.
        - Paracephalus.
        - Omacephalus.
        - Hemiacephalus.
      - Family 2. Acephali.
        - Acephalus.
        - Peracephalus.
        - Mylacephalus.
    - Tribe 2. Anidean.
  - Order III.—Parasites.
- Class II.—Double monsters (monstres composés).

Saint-Hilaire's scheme was a distinct improvement upon previous plans, for it afforded a means of grouping together closely allied species of deformity; but it was far from perfect, for it overlooked the fact that omphalositic fœtuses were always twins. Had Saint-Hilaire recognised the invariable plural character of the conception in these cases, and the allantoic connexion between the twins, it is probable that he would have hesitated before placing them amongst the single monsters.

From what has been already said of Förster's classification, it is evident that no provision was made therein for the grouping of the paracephalic fœtuses described by Saint-Hilaire. Förster, therefore, was compelled to place them amongst the acephali, an arrangement which was most unfortunate, for the expression paracephalous acephalus, which is a contradiction in terms, was thus introduced. Claudius and Ahlfeld added to our knowledge of acardiac fœtuses by their ingenious explanation of their mode of origin, and the latter expressed his theory of origin in the name "allantoic parasites," which he gave to the members of this group of monstrosities. Ahlfeld, however, still used the term "acardiac" as the general designation of the whole class, and thus was compelled to find a place for fœtuses provided both *with a head and a heart* among the *acephalous acardiaci!* The name "acardiacus anceps," which he proposed as an equivalent for paracephalus, demonstrated that it was impossible to accommodate the old nomenclature of Elben to the recent discoveries of teratology without causing great inconvenience and confusion.

It was evident that a new nomenclature was needed to express the important discoveries that had been made concerning the nature and origin of deformed twins. Taruffi, therefore, proposed for them the general name omphalo-angiopagous disomata, placing them at once amongst the terata polysomata. This name is better than Saint-Hilaire's omphalosite and Dareste's adelphosite, and is much more correct than Elben's acardiacus, for it emphasizes two most important characters,—the plural nature of the gestation, and the existence of a vascular connexion between the twins through the umbilical cords; but for etymological correctness the term allantoido-angiopagous would have been better still. Taruffi also noted that neither was the head nor the heart invariably absent in these fœtuses, and he therefore used Saint-Hilaire's term paracephalus for such cases as showed a more or less perfect head. When the heart was also present the fœtus was designated paracephalus cardiacus. The rest of Taruffi's scheme of classification did not differ very greatly from those of Saint-Hilaire, Ahlfeld, and Förster. It is rather remarkable that the manifest advantages of Taruffi's method have not commended it to modern writers on teratology;[1] but the systems of Saint-Hilaire and

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[1] In the two most recent works on Teratology, Hirst and Piersol's *Human Monstrosities* (1892), and Guinard's *Précis de Tératologie* (1893), Saint-Hilaire's classification is still adhered to.

Förster have been for many years so fully accepted that their replacement by any other must necessarily be a work of some time.

In addition to Taruffi's contributions to the study of allantoido-angiopagous twins, it is necessary to mention those of Breus (1881). He has endeavoured to prove that deformed twins arise in a manner quite different from that supposed by Claudius and Ahlfeld. Instead of regarding them as due to tardy allantois formation, whereby one of twin fœtuses monopolises the whole internal surface of the primary chorion, whilst the other is forced to implant its allantois on that of the first, he believes that the deformed twin is primarily so defective that it is not capable of independent intra-uterine nutrition, that it dies, and that then the blood current of the normal twin enters it and keeps it nourished in an imperfect degree until the full term of pregnancy is arrived at.

Such were some of the most important landmarks in the history of the progress of knowledge concerning these curious fœtuses; and I may now proceed to the description of the only paracephalic twin that I have met with.

CLINICAL HISTORY AND DESCRIPTION OF A FŒTUS PARACEPHALUS DIPUS ACARDIACUS.

For the paracephalic fœtus about to be described I am indebted to Prof. A. R. Simpson, to whom it was sent by Dr John Edmondson of St Helens; the latter has kindly furnished me with the clinical history of the case. It was shown and briefly described at a recent meeting of this Society (May 1892).

CLINICAL HISTORY OF DR EDMONDSON'S CASE.

The mother was 35 years of age, and a vii.-para. She had been married when 23 years old, and had suffered for some years from chronic bronchitis. She was in poor circumstances, and of a delicate constitution. Her past pregnancies were six in number; in two of them (the first and fourth) forceps had been required to effect delivery. None of these gestations was plural, and save for the use of forceps above noted, there was nothing abnormal in the labours.

During her present pregnancy (the seventh) the patient suffered from pain in the right side of the abdomen, which made walking very difficult. There was also a troublesome amount of bronchitis. Labour came on near the full term, and when Dr Edmondson arrived at the house a perfectly well-formed male infant had been born and its cord tied. The birth was followed by severe hæmorrhage, and as the placenta had not yet come away, Dr Edmondson passed in his hand to remove it. In doing so he discovered that there was a second child in utero. Having delivered the placenta of the first infant, he hooked down what he thought to be the leg of the second child. The great thickness of the parts above the knee made him doubt the correctness of his diagnosis; but the appearance of a foot

Plate I.

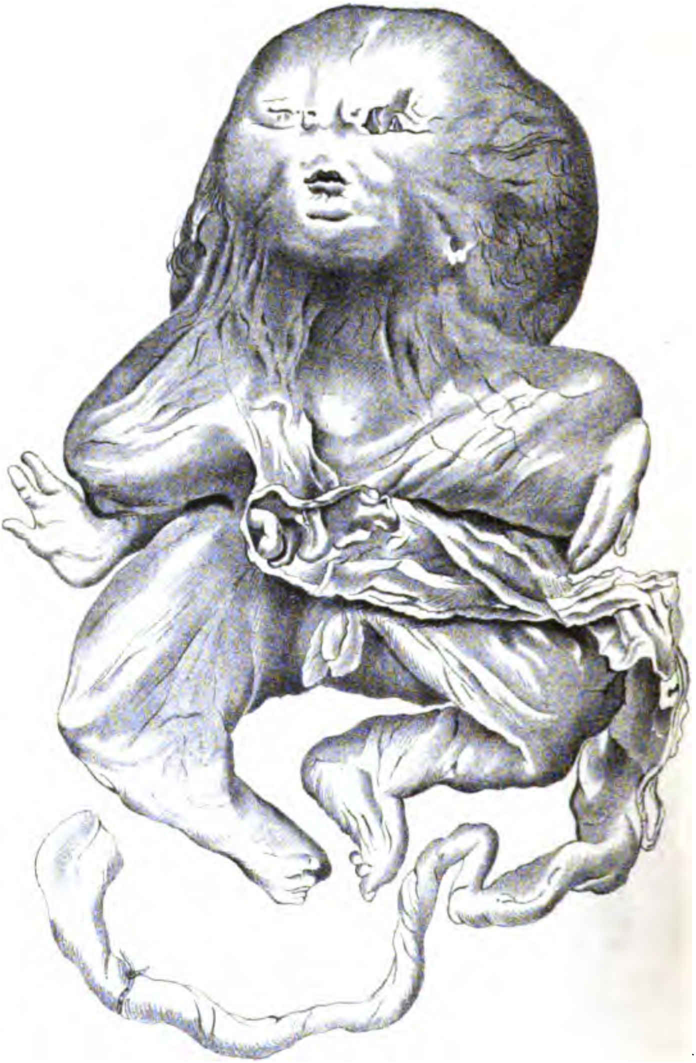

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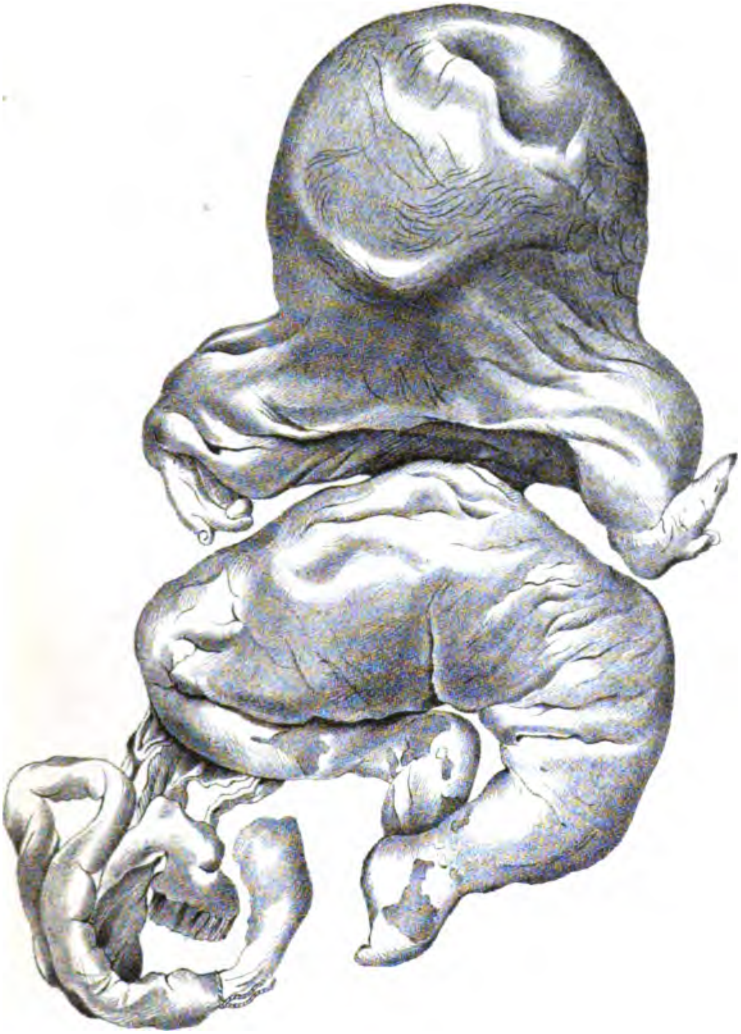
Plate II.



CATHIE. DEL ET LITH

at the vulva finally settled the matter. In the meantime the mother was almost pulseless, and further advice was sought. Before, however, the consultant arrived the second child was born. Its placenta was also retained, and in addition was adherent to the uterus in the upper polar circle. There was, therefore, more hæmorrhage until Dr Edmondson passed his hand in and detached and removed the afterbirth. The time that elapsed between the birth of the first infant and the removal of the placenta of the second was little more than one hour. The first infant was born alive, the second was still-born.

On the third day of the puerperium the temperature rose to 100°·4; but it fell again on the following day, and the mother did fairly well, although she was in a weak state for a much longer time than she had been after her previous confinements. Labour took place on January 10th, 1892, and in a letter, dated August 13th, the patient is reported to be well.

The father was a perfectly healthy man. Both infants were males. The first born was quite well formed, although of small size. He was delicate from the time of birth onwards, and died when four months old from an acute attack of bronchitis.

The mother had two married sisters, of whom one had a family of five children and the other one of six. One sister, it was stated, had died on the ninth day after confinement from inflammation of the womb. There was no family history of plural births.

Dr Edmondson was of opinion that the placentæ were separate in this case, and that the cords were inserted in the usual position; but as the afterbirths were unfortunately destroyed immediately, and as the critical state of the mother fully absorbed all the medical man's time and attention, it is possible that some vascular connexion may have existed between the placentæ or cords. The examination of the deformed infant revealed conditions which can only be explained by supposing that some such connexion existed; but to this subject further attention must be paid after the morbid anatomy of the fœtus has been described.

MORBID ANATOMY.

I. OF THE FŒTUS.

A. *External Appearances* (Plates I. and II.).—The fœtus, a male, had a total length of 28 cms., and the distance from vertex to symphysis pubis was 18 cms. It may be best described as made up of two parts attached to each other in the umbilical region by what may be called a very narrow waist. The upper part consisted of the head, shoulders, and upper limbs; the lower, of the pelvis and lower extremities. In circumference the head measured 33 cms., and the shoulders 32 cms.; but the transverse diameter of the latter was greater than that of the former. The circumference at the point of constriction was only 12 cms., and no bone could be felt in the structure joining together the cephalic and pelvic parts of the fœtus.

In its external appearances this fœtus showed gross malformations (*vide* Plates I. and II.). The skin of the head passed almost directly on to the misshapen arms, and there was, therefore, no trace of a neck. Immediately below the shoulder-girdle was a deep constriction—the narrow waist already alluded to. The trunk widened out again in the region of the pelvis, and the lower limbs were permanently fixed in a tailor-like position.

In the region of the head it could be seen that the upper part of the cranium was membranous, not osseous. Palpation confirmed this, and made it certain that part of the parietal bones and a portion of the frontal were wanting, and that there was hydrocephalus. Some scattered hairs were to be seen on the scalp, lying principally at the sides of the head and coming forward somewhat in the manner of whiskers. At the nape of the neck and sides of the head, at about the level of the mouth, the subcutaneous tissues were thickened, and had an elastic, soft feeling, whilst here and there the sensation of fluctuation could be elicited. The face was greatly deformed. There was no nasal projection, but in its place existed a linear depression lying between two blind pits which represented the nostrils. On each side of this very rudimentary nose lay an eye-aperture with twisted and defective eyelids. The orbit on the left side was larger than that on the right. No properly formed eyeball could be detected.[1] The eye-apertures were on the same level as the nasal pits, and in close apposition to them. At a distance of nearly 2 cms. below these structures was situated the mouth, in which a small tongue could be seen. On opening the mouth it was discovered that there was a fissure in the median line of the palate. Below the buccal aperture was the indication of a chin. On the left side, at a distance of 3 cms. from the angle of the mouth and at the same level as the chin, was a blind pit, which probably represented the external ear. On the right side, at the same level, but at a distance of 3·5 cms. from the angle of the mouth, was a button-like projection of skin, measuring about 1 cm. in diameter, and having at its centre another blind pit; this was doubtless the representative of the right auricle. Above and behind this structure were two small vesicles or blebs.

In the region of the neck and shoulder-girdle the skin lay in folds, and on palpation a greatly-thickened, soft subcutaneous tissue-layer could be made out. So thick was this layer that the bones of the arms could scarcely be felt. The skin and subcutaneous tissue of the head passed like a cape on to the arms, leaving only the hands free. The thumb and index finger were absent on both sides, and there was double club-hand of the radial type. Nails were present on all the fingers.

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[1] It must be remembered that the specimen had been in spirit for four months before it came into my hands, consequently the parts had no doubt shrunken.

On the anterior aspect of the constricted part of the trunk was seen a ruptured umbilical hernial sac. This contained a few coils of intestine, which were closely adherent to each other and to the wall of the sac at its upper part. At the neck of the sac inferiorly were one or two slender adhesions passing to the intestinal coils. A cæcum could be distinguished with a vermiform appendix (about 1·3 cm. in length), and the coils of gut were probably representatives of the colon. So far as could be made out by palpation no vertebral column existed at the point of constriction.

In the region of the pelvic girdle were seen a penis and scrotum, but no testicles could be felt in the latter. Posteriorly there was a patent anal aperture lying deeply between very prominent buttocks. The subcutaneous tissue in this region seemed to form a greatly thickened layer and was markedly soft in consistence. The lower limbs could not be straightened out; they were fixed in a tailor-like position. The feet were clubbed. On the right foot were three separate toes; but one of these, the outermost, was evidently made up of three digits fused together. On the left foot were three single toes. There were abrasions of the cuticle on some parts of the lower limbs, and these were especially marked on the feet. There was a tear in the soft structures of the left leg just below the knee; this had probably been caused by traction during delivery, combined with a certain degree of innate friability of the part. Numerous furrows in the skin existed all over the lower limbs, but especially on their posterior aspect. As was the case with the arms, the subcutaneous tissue of the legs felt greatly thickened and soft.

B. *Appearances of the Viscera, etc.*—When the scalp and thickened cerebral membranes were divided, it was found that there was an enormous accumulation of clear fluid in the position of the lateral ventricles. The falx cerebri intervened between the fluid accumulations above, but inferiorly they communicated. Part of the frontal lobes, a thin layer of cerebral tissue laterally, a greatly macerated pons varolii inferiorly, and a normal-looking cerebellum inferiorly and posteriorly, were all the parts of the central nervous system that could be recognised. When these structures were removed no trace of a foramen magnum could be discovered. Several of the cranial nerves could be seen leaving the interior of the skull, but from the soft nature of the parts they could not be satisfactorily traced.

When the skin was reflected at the back and sides of the head several cavities containing clear fluid were revealed. Two of these were of the size of a large walnut, and lay one on each side of the middle line just behind the occiput and in the subcutaneous tissue, which was here much thickened. Two similar cysts, also with clear fluid contents, lay one on each side, just behind the spot where the rudimentary ear-pit was visible on the skin surface. Besides fluid, these cystic cavities, which had a smooth, glistening lining membrane, also contained soft, curdy, yellowish-white masses. One or two smaller cysts were found lying between those that have been already mentioned. The presence of fluctuation in the region of the neck was thus accounted for.

There was no thoracic cavity. It was found, on cutting down in the middle line of the neck, that there was a larynx and trachea measuring about 7 cms. in length, and terminating blindly just above the umbilical hernial sac. At its upper end the larynx opened into the back of the buccal cavity. There was no trace of an œsophagus. No structures resembling heart or lungs could be found.

The subcutaneous tissue of the arms formed a layer 2·5 cms. in thickness, and was composed of whitish, glistening, and densely infiltrated tissue. From it a clear serous fluid oozed out on pressure. No cysts could be seen in it with the naked eye. The muscles of the arms were apparently represented only by bands of fat-like tissue running in various directions immediately beneath the subcutaneous layer and near to the bones.

There was no abdominal cavity properly so-called, for the coils of intestine were all densely adherent to each other and to the surrounding parts. On tracing the bowel inwards from the hernial sac, it was found that a loop of it like the sigmoid flexure passed downwards, and ended in a part which became continuous with the rectum. For a probe passed up through the anal aperture could be felt in the loop of bowel above mentioned, and the fact was also ascertained by dissection. The intestines contained a small quantity of a dirty-white porridgy material. The whole bowel measured only 25 cms. in length when its adhesions were divided, and it was separated from its short and contracted mesentery. The stomach, liver, spleen, kidneys, and supra-renal capsules were absent, unless four small bodies which were found in close connexion with the intestine might be regarded as representing some of these organs. One of these bodies was 1 cm. in length and 5 mms. broad; it lay in the curve formed by the cæcum, and was adherent to it. The three others lay near to each other, and were also bound to the coils of bowel; one was 1·5 cm. in length, another 8 mms., and the smallest 3 mms. The largest was somewhat round in shape, and the smaller ones were flattened. The urinary bladder was present; it was small in size, and lay in its normal position in front of the rectum. A urethra passed from the bladder through the penis, and there was a prostate gland. No testicles were found in the scrotum. There was no connexion between the bladder and the rectum. The vascular arrangements will be described along with the umbilical cord.

In the case of the lower limbs the œdematous subcutaneous tissue had a thickness varying from 1·5 to 1 cm., and here and there in it small pea-sized cysts could be seen.

C. *Characters of the Skeleton.*—In the region of the head the vault bones were all present, but some of them were imperfect. The parietals, supra-occiput, and the two halves of the frontal did not lie near one another at the vertex, but left at that part a membranous interval of considerable extent. Further, the squamous portion of the temporal showed delayed ossification; it consisted of four or five small scales of bone united together by membrane. There was a slight indication of a zygomatic process and no sign of the annulus tympanicus; but the petrous and mastoid parts of the bone were well developed. The ex-occipitals, basi-occiput, and supra-occiput were in contact with each other but not fused together; *there was, therefore, no foramen magnum.* The sphenoid was well ossified, as was also the ethmoid. The nasals, malars, lachrymals, and the superior maxillæ did not show any abnormalities; but there was no trace of palate bones nor of vomer. The lower jaw had a very feebly marked coronoid process. There were no nasal fossæ. The roof of the mouth, therefore, lay almost immediately beneath the basi-sphenoid and the ethmoid. The normal number of dental germs existed in the maxillary bones. The hyoid was present.

There was *no trace whatever of a vertebral column.* Nothing but muscular and adipose tissue intervened between the scapulæ in the upper part of the trunk, and in the lower the two innominate bones came into close contact posteriorly to form a small and rudimentary pelvic cavity. There was no sternum, and there was no trace of ribs or of clavicles.

The scapula was rudimentary: it consisted of a small scale of bone attached to the glenoid cavity. The humerus was normally developed; it measured 5·5 cms. in length. There was no radius; and the ulna, which was 3 cms. in length, was anchylosed to the lower cartilaginous end of the humerus at the elbow-joint. A cartilaginous carpus was present, and there were three metacarpal bones along with their phalanges. The bones of the thumb and index finger were wanting. The carpus was articulated to the lower end of the ulna at a right angle, giving rise to the club-hand.

The os innominatum showed the degree of ossification usually met with at birth. The femur measured 6·5 cms. in length, and had no ossific nucleus in its lower end. The tibia and fibula were both present, and each had a length of little more than 5 cms. The knee-joint was anchylosed in a flexed position, and there was no trace of a patella. There were two metatarsal bones in the right foot, and there were the usual ossific nuclei in the os calcis and astragalus. The phalanges of three toes were present; but the distal phalanx of the outermost toe was triple. The skeleton of the left lower limb was similar.

D. *Microscopic Appearances.*—Both the microscopic investigation of the tissues and the chemical examination of the cyst-contents were rendered unsatisfactory by the long period of time (four months) which had elapsed between the birth of the fœtus and its dissection.

Several sections of skin and subcutaneous tissue from the thigh, arm, and head were examined microscopically, and in those from the first two situations the three layers—cutis, subcutaneous tissue, and musculature—were clearly recognisable. The epidermis, with a thin coating of vernix caseosa, was present at most places, but here and there it was detached. The cutis had an opened out appearance; but its fibres seemed normal in size, and did not appear to be increased in number. Here and there hair follicles, hairs, and rudimentary sweat-glands were to be seen. The subcutaneous tissue formed a thick layer of a delicate areolar tissue, the meshes of which were polygonal in outline and contained a clear serous fluid with no fat cells. There were scarcely any bloodvessels to be seen either in the cutis or in the underlying areolar layer. Beneath the subcutaneous tissue was the representative of the muscular layer. Hardly any muscle-bundles were to be made out,—they seemed to have been replaced to a large extent by adipose tissue, and beneath them lay the periosteum and the bone of the part.

A section of the wall of one of the large cysts at the back of the neck showed a fibrous structure; but no endo- or epithelial lining could be made out. Microscopical and chemical examination of the cyst-contents gave unsatisfactory results; only a few broken down cells and masses of granular debris could be seen, and the fluid contained a large proportion of spirit which had soaked into the tissues.

The investigation of the little gland-like bodies found in the neighbourhood of the intestine revealed the following appearances: The largest of these bodies showed the microscopic structure of the liver at an early stage of development. The second in size, that which lay near the cæcum, was found to be a separate loop of bowel, and showed in its interior some crypts of Lieberkühn. The larger of the other two bodies had an appearance somewhat resembling that of the spleen, and the smaller showed tissue not unlike that seen in the kidney in early fœtal life. These structures, like the skin and subcutaneous tissue, were markedly anæmic.

II. OF THE ANNEXA.

In the absence of the placenta and membranes all that could be learnt with regard to the state of the fœtal annexa had to be gathered from the examination of the portion of umbilical cord attached to the body of the deformed infant. The total length of the attached cord was about 48 cms. On close inspection it became evident that it consisted of two parts. The distal portion resembled a normal umbilical cord, it was 32 cms. in length, was tied about 5 cms. from its free end, and had a circumference of about 4 cms.

It contained two arteries and one vein lying in a normal amount of the jelly of Wharton. When traced towards the fœtus it was found to terminate at a point about 16 cms. distant from the umbilicus in a disc of tissue that resembled the wall of a blood sac, or part of the amnion with a thin layer of placental tissue attached. Here the torn ends of the vessels were seen. In the other part of this disc were found the torn ends of two other vessels, an artery and a vein, and these could be traced, running in the membranes which formed the remaining 16 cms. of the cord, to the umbilicus of the fœtus, into which they passed. There was, therefore, no properly formed cord between the disc of tissue and the fœtus, only two small vessels lying in the membranes which formed the walls of the ruptured umbilical hernia-sac.

At its point of entrance into the body the single umbilical artery broke up into two branches. One of these passed upwards to the neck, where it again subdivided into arteries for the head and upper limbs; the largest of these subdivisions were the two that passed up to the head, lying one on each side of the larynx and trachea. The other primary branch proceeded downwards to supply the pelvis and lower limbs. The umbilical vein also divided into two trunks, and these had a distribution similar to that of the arteries.

It is somewhat difficult to reconcile the description of the fœtal annexa given by Dr Edmondson with that of the fœtus and umbilical cord learnt from dissection. The fœtus was acardiac, and, therefore, its circulation must have been carried on by the heart of the other twin. In order that this might be accomplished it is necessary to suppose that the two circulations became continuous at some point: there may have been a union between the two placentæ, or vessels may have passed from one cord to the other, or from the membranes of the one fœtus to those of the other. I am inclined to regard the following explanation as that which best accords with the ascertained conditions. The distal part of the umbilical cord was the cord proper of the normal twin. At the disc of tissue it joined the placenta, but at the same spot gave off two vessels (an artery and a vein), which passed in the membranes to the deformed twin, and formed the vascular connexion between it and its well-formed brother. The two placentæ removed by Dr Edmondson were probably the partly united halves of a single afterbirth.

In the peculiar relations and arrangement of the umbilical vessels it is very probable that the cause of the deformities that existed in this twin fœtus is to be found; but it must at the same time be admitted, that it is just possible that the malformations may have been the primary, and the inosculation of the two fœtal circulations the secondary phenomenon.

In my next communication I shall give a summary of the morbid conditions found by other observers in fœtuses of the paracephalic variety, and shall compare these with the appearances described above, and draw from them some general conclusions with regard to this form of monstrosity.

(*To be continued.*)

Part Second.

REVIEWS.

Influenza. By JULIUS ALTHAUS, M.D., etc. Second Edition, much Enlarged. London: Longmans & Co.: 1892.

THIS is by far the best monograph which has appeared on the subject of influenza. It gives a thoroughly well-balanced and interesting account of the disease, and the author has rendered good service in its publication, especially in referring to 508 papers (of which a full bibliography is given) which have appeared during the past two or three years.

Before alluding in detail to various parts of the book, it may be mentioned that the author believes that the evidence which has gradually accumulated with regard to the influenza's mode of spreading seems to him to point irresistibly to the following conclusion:—

"Influenza is a contagious disease, owing, in the first instance, to the development of Pfeiffer's bacillus outside the human system. Under the influence of certain conditions, with the nature of which we are as yet unacquainted, this bacillus increases and multiplies to such an extent as to become the efficient agent in causing influenza. After this has once commenced, it easily spreads from one person to another, in the same way as measles, small-pox, or scarlet fever, either by actual contact or by 'fomites,'—that is, infected materials, such as clothing, or goods of any description which may have become imbued with Pfeiffer's bacillus. With regard to its progress, grip follows the established lines of human intercourse, and spreads at about the same pace as men are in the habit of travelling at those times and places where it becomes epidemic. It has nothing to do with meteorological conditions; advances independently of climate, season, wind, and weather; and affects large masses of the population at the same time, for the following reasons:—1st, Because it has a very short period of incubation, viz., about two days; 2nd, because men are exceedingly susceptible to infection by this particular bacillus; and, 3rd, because the bacillus is propagated not only by persons who are ill in bed, but by many people who have the complaint in a mild form, and therefore continue to move about and pursue their ordinary avocations, thus forming focuses of infection for all those who may happen to come in contact with them. Germs or spores of the bacillus may remain undestroyed for a considerable time, and may, under the influence of favourable conditions, lead to fresh multiplication of the bacillus, and therefore to fresh outbreaks of the disease."

It will be noticed in the above quotation that Dr Althaus uses the word "grip;" but while we fully agree with him that the word "influenza" is not happily chosen, we do not think the words "grip," "gripped," "gripple," and "post-gripple" very elegant, and wish that he had used his ingenuity to select some more euphonious word.

The book commences with an account of the researches of Pfeiffer, Kitasato, and Canon into the bacteriology of the disease, and rightly, we believe, concludes that the tiny rods, about half the length of the bacillus of mouse-septicæmia, and as wide as they, are the cause of the disease, and that a definite diagnosis can be made by their discovery. We also believe that his analogy between the action of the bacillus of "grip" and that of Fraenkel's pneumonia diplococcus is correct, and also in his assumption "that the patient having acquired infection, a poisonous albuminoid secreted by the bacillus of 'grip,' and which he calls the 'grippotoxine,' circulates in the blood, and causes the special symptoms of the feverish attack." He believes that in a day or two an antidote, which he calls "anti-grippotoxine," is formed in the serum of the patient. This assumption answers the questions why persons acquire influenza, why they recover from it, either perfectly or imperfectly, and why, after having had it once, they contract it again a second or third time.

Dr Althaus's chapter on the feverish attack is very good, as also the one on the complications and sequelæ of influenza. The author goes into the question of the diagnosis of influenza very fully, and he calls marked attention to its similarity with dengue, and points out various points by which they may be possibly differentiated. But that this differentiation is not always easy or possible we are convinced.

With regard to prognosis to be given in cases of influenza, Dr Althaus's remarks are very wise, and he is quite justified in holding that the disease is not one to be trifled with, and certainly not one to be scorned as imaginary, especially as the sequelæ are frequently very serious. He does not believe that isolation can be carried out, and his remarks on treatment are brief, to the point, and valuable.

Treatise on the Diseases of Women. By ALEXANDER J. C. SKENE, M.D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, etc. Second Edition. London: H. K. Lewis: 1892.

DR SKENE is to be congratulated on the appearance of a second edition of his admirable work on the *Diseases of Women.* It is a goodly volume; and its contents give evidence of much careful revision, and of not a little expansion. New chapters have been added on ectopic gestation, diseases and injuries of the ureters, and vesical hernia. The special bent of the author's mind is seen in the fact that more than three hundred pages are devoted to the diseases of the bladder, urethra, and ureters; this part of the treatise is specially well done, and is greatly enriched by the numerous illustrative cases which are scattered through the work. The coloured plates and the many woodcuts which abound in the volume are of great assistance in elucidating the text. Dr Skene's book, whilst it may be too large for the ordinary medical student, will be of immense use to the young graduate, and it is a work of which American gynæcologists may well be proud.

Advice to Women on the Care of the Health before, during, and after Confinement. By FLORENCE STACPOOLE, Diplomée of the London Obstetrical Society. London: Cassell & Company, Limited: 1892.

THIS little book contains much sound advice couched in language easily understood by the laity. The chapters on the care of the health in pregnancy, on miscarriages, and on the preparations for a confinement are specially full of useful hints which it would be well for every woman about to become a mother to know. The authoress does not attempt to go deeply into technical questions, but constantly points out the symptoms which are really dangerous and which require the advice of a medical man. Her warning concerning the import of swelling of the legs during pregnancy is a case in point. The chapter on puerperal fever, however, is somewhat diffuse, and is more suited for the study of the midwife than of the expectant mother. The authoress is well known as a popular lecturer on health subjects, and many women will be glad to have her views and advice in the more permanent form in which they are here presented. Medical men may safely put this book in the hands of patients passing through the anxious period of a first pregnancy.

The Diseases of Children—Medical and Surgical. By HENRY ASHBY, M.D. Lond., F.R.C.P., and G. A. WRIGHT, B.A., M.B. Oxon., F.R.C.S. Eng. London: Longmans, Green, & Co.: 1892.

THIS is the second edition of a book which has already established a right to be considered a standard work. It is the only well-illustrated text-book on diseases of children that we have, and the only one in which both the medical and surgical aspects of the subject are treated with equal thoroughness.

In this edition, we are told, "the whole of the work has been thoroughly revised, and several of the sections have been entirely rewritten. Many clinical reports of interesting cases, and forty new woodcuts—most of them original—have been added." The authors also tell us that it has been their aim "to keep the work abreast of the most recent knowledge, and to make it present, as far as possible, a complete account of the diseases of childhood."

We think that they have succeeded admirably in this endeavour, and have given us a volume which is in many respects a model of what a book of the kind should be. It is one that can be warmly recommended to a variety of readers. The student or junior practitioner will find in it a concise description, in plain, direct language, of all the diseases he is likely to meet with in children, along with sound and practical advice as to their treatment. While, however, as we are told in the preface, the book is intended for the younger members of the profession, the amount of experience which the authors have brought to its preparation will certainly render it also of great use to hospital physicians and surgeons and older practitioners, who will know how to value and make use of the mine of interesting and accurately recorded information which it contains.

The illustrations are very artistic and well chosen, and the printing and general get up of the book all that could be desired.

An American Text-book of Surgery for Practitioners and Students. By C. H. BURNETT, P. S. CONNER, F. S. DENNIS, W. W. KEEN, C. B. NANCREDE, ROSWELL PARK, L. S. PILCHER, NICHOLAS SENN, F. J. SHEPHERD, L. A. STIMSON, W. THOMSON, J. C. WARREN, and J. WILLIAM WHITE. Edited by WILLIAM W. KEEN and J. WILLIAM WHITE. Philadelphia: W. B. Saunders: 1892.

WE have always been of opinion that a better text-book of surgery could be produced than those in general use, and that no single author could complete such an undertaking without falling behind the times in certain departments of the subject. Of the volume before us it may be said that our American confrères have produced a book which, in many respects, surpasses any similar work with which we are acquainted. It is the joint production of thirteen authors, to whom, as we are told in the preface, the entire work has been submitted in proof sheets for mutual criticism and revision, the editors assuming reponsibility for the orthography, for the general plan of the book, and for the method of mutual criticism and unsigned chapters. As a result of this novel system of joint authorship, there is a distinct improvement on any kind of dictionary or system of surgery; for there is an absence of overlapping, and of repetition, and of any notable differences of opinion, while at the same time the book may be said to represent, upon important surgical topics, the concensus of opinion of the surgeons who have joined in its preparation. It is not to be supposed, however, that the reader would not discover that the work is a joint production, for his verdict on the text would vary within wide limits, according to the particular section he might select. There are certain chapters which bear the import of having been written to order,—it may be because the author in question does not possess the faculty of communicating his knowledge to others, or that he has not been sufficiently interested in the subject assigned to him to ensure that degree of excellence which characterizes the greater part of the volume.

We would mention the chapters on Surgical Bacteriology, Repair, Inflammation, Pyæmia, Tuberculosis, and Syphilis, and the sections on Regional Surgery, as being of the highest degree of excellence. The chapter on Diseases and Injuries of the Abdomen is the best *résumé* of this important branch of surgery with which we are acquainted. On the other hand, the chapters on Traumatic Fevers and on Septicæmia are confusing in their teaching. That on Rickets is too condensed to be easily followed by the student; the diseases of the vascular system are not satisfactorily described, there being a very imperfect account of the different forms of angioma, while no directions are given for the treatment of these tumours by electrolysis, nor any explanation of the principles upon which this treatment is based. In the treatment of aneurism by galvano-puncture it is actually stated that the points of the needles should touch one another within the sac. The description of the chronic inflammatory affections of the breast is most incomplete, chronic interstitial mastitis being disposed of in three short paragraphs. Of actual errors there are remarkably few; still we might instance the following as worthy of correction. In the section on Tumours, we are told on page 200 that "the alveolar sarcoma is so called because the basis substance encloses each cell in a separate space or alveolus." On page 456 we are told that the glands in Hodgkin's disease do not become fused together or adherent to the surrounding parts. On page 57 the formation of hæmorrhagic infarctions is explained by a backward flow taking place from the veins into the emptied vessels. Among the diseases of the breast, retro-mammary abscess is described without any indication of its being of the "cold" variety, and owing its origin to a tubercular lesion of the chest wall.

In conclusion, it should be stated that the quality of the type and paper leave nothing to be desired. In the matter of illustrations the book is remarkable, the majority being superior to those in any other surgical manual. It is surely an error in judgment to have included amongst these, certain woodcuts of which that illustrating fibro-adenoma of the mamma is an example, and which are quite out of place in a scientific or any other publication.

Human Embryology. By CHARLES SEDGWICK MINOT, Professor of Histology and Human Embryology, Harvard Medical School, Boston. New York: William Wood & Co.: 1892.

THIS is the most noteworthy work in English upon embryology that has appeared since the publication of F. M. Balfour's well-known *Comparative Embryology.* Professor Minot is well known as an embryologist and histologist who has made personal observations of value upon nearly all the subjects treated of in this book; among these may be specially mentioned his researches on the fœtal membranes, on the skin, and on the blood-corpuscles, his views upon the importance of chromatin in heredity, and his theory of the "genoblasts." But in addition to this the author has proved himself to be an able writer of a text-book, and has treated with great fairness and fulness the views of other embryologists. The plan of the work is as follows:—There is first an introduction, in which the structure of the uterus, including that of the decidua menstrualis and graviditatis, is described, and the general outlines of human development stated; then there is a part devoted to the genital products, including the history of the genoblasts (*i.e.*, the sexual elements proper) and the theory of sex; the germ-layers next engage attention, and we note that the author discards the terms epi-, meso-, and hypoblast; the third part deals with the embryo, the fourth with the fœtal appendages, and the fifth with the fœtus itself. The part treating of the fœtus is by far the largest, as its consideration occupies nearly 400 pages out of a total of 815. The preponderating influence of German embryological studies during the last fifteen years is demonstrated by the fact that the author has often felt it best to use the original German descriptive terms (such as keimplasma, kernplatte, etc.) When we take into account the innate difficulties of the subject, it is amazing to find how easily this book can be read and how clearly the information is put. The 463 engravings are very good and of great service, and the book as a whole is one that we shall often refer to. It will, no doubt, take its place as the standard work on the subject among English-speaking scientists.

Anatomy of the Brain and Spinal Cord. By J. RYLAND WHITAKER, Senior Demonstrator of Anatomy, School of Medicine, Minto House. Second Edition. Edinburgh: E. & S. Livingstone: 1892.

THE student invariably finds much difficulty in studying the anatomy of the brain and spinal cord, partly because the condition in which he commonly finds these structures in the dissecting-room subject precludes any careful examination or dissection, and partly because the structures are extremely complex, and require for their elucidation a combination of macroscopic and microscopic investigation.

We are, therefore, pleased to see that Messrs E. & S. Livingstone have issued a second edition of Mr Whitaker's admirable *Anatomy of the Brain and Spinal Cord.* If used in conjunction with the spirit preparations of the central nervous system which are now to be found in every dissecting-room, this little work will prove of the greatest service to the student. Of course, if used without such actual specimens it becomes no more than a cram-book. Its very clearness, by tempting to such a method of employment, is thus a danger.

To the practitioner wishing to refresh his knowledge of this important branch of anatomy the volume will be of service, although it is not so full as Vol. III. Part 1 of the new edition of *Quain's Anatomy*, which has just appeared, and which deals with the same subjects.

Dr Whitaker is to be congratulated on the well-merited success of this work, and deserves high commendation for the pains he has taken to bring it fully up to date.

On the Chemistry and Therapeutics of Uric Acid, Gravel, and Gout. Being the Croonian Lectures for 1892, with Additions. By Sir WILLIAM ROBERTS, M.D., F.R.S. London: Smith, Elder, & Co.: 1892.

THESE Lectures, now published in book form, form a valuable addition to our knowledge of the presence of uric acid in the body, and the form it there takes. The results of the author's inquiries are destructive rather than constructive. Dr Haig has lately taken every occasion of asserting that uric acid is responsible for most of the ills that human flesh is heir to. He used to say that it existed in the blood in the form of uric acid, but is willing to yield to the present author when he maintains that it is present as quadri-urates. But Dr Haig still persists in regarding alkalies as a universal solvent of the acid. Sir William Roberts, in the book before us, points out that uric acid only exists in solution in the body as a quadri-urate, that this is partly precipitated, if it remains long enough or in sufficient quantity in the blood serum, in the form of a bi-urate, an additional atom of the base being picked up. This bi-urate is very insoluble in most media, being most soluble in distilled water. The presence of sodium salts in the water prevents so much dissolving, and that to a much greater degree, than salts of other bases.

The solubility of sodium bi-urate in water at 100° Fahr. is 1·0 per 1000, but if the water contain ·2 per cent. sodium bicarbonate, only ·34 per 1000 is taken up; while, if it contain ·2 per cent. potassium bicarbonate, 1·0 per 1000 is still dissolved.

It follows, therefore, contrary to accepted opinions, that the more soda the greater the deposit in the tissues, and this result is also made use of to explain the almost invariable preference of the biurate for joints and synovial membranes. These tissues are looked on as having a greater percentage of salts, especially those of sodium, than their neighbours.

The chief conclusions of the author on the therapeutics of gout are as follows:—Restrict nitrogenous foods, take alcohol as you like, avoiding excess, diminish the intake of sodium salts, and flush the blood well with water. Increase of the alkalinity of the blood serum has little or no effect on the solubility of gouty deposits. We will expect to see next that the proper treatment for gout is the exhibition of acids.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXXII.—MEETING III.

Wednesday, 18th January 1893.—Mr JOSEPH BELL, *President, in the Chair.*

I. ELECTION OF MEMBERS.

The following gentlemen were elected Ordinary Members of the Society:—Richard J. A. Berry, M.B., C.M., Royal Infirmary; William Brendon Gubbin, M.D., C.M., Selville, Portobello; W. B. Mackay, M.B., M.R.C.S., 18 Quay Walls, Berwick-on-Tweed; Dr Alexander Peyer, Zürich; Alexander Reid Urquhart, M.D., The Murray Asylum, Perth.

II. EXHIBITION OF PATIENT.

Mr A. G. Miller showed a patient, aged 63, on whom he had performed ILIAC COLOTOMY three years ago, for MALIGNANT DISEASE OF THE UPPER PART OF THE RECTUM. Patient, who seemed a fairly healthy man, loosed his clothing and showed the truss which he wears over his fistula, and removed the plug by which fæces are prevented from passing except when desired. Mr Miller explained how patient managed to defæcate. He sits with the fistula exposed, and presses out the fæces by abdominal contraction. He has a distinct desire to defæcate, the sensation being mostly in the rectum. The fæces are received on paper, or in a vessel, and cleanliness is quite easily managed. There is a slight prolapse of the bowel before and during the act, but this is easily replaced and kept up by the plug and truss which he wears. A small quantity of "something" (usually liquid) passes from the rectum during the act of defæcation; on account of this, patient has always to sit on water-closet when defæcating. (A full description of this case appears at page 822 of this Journal.)

III. *Dr A. Lockhart Gillespie* read his paper on SOME PRACTICAL RESULTS FROM THE CHEMICAL EXAMINATION OF THE CONTENTS OF THE HEALTHY STOMACH, which was illustrated by limelight charts. This paper will appear in a future number of this Journal.

The President said he thought they were deeply indebted to Dr Gillespie for his admirable paper, which was so full of scientific matter and finished up with such excellent practical observations. Dr Gillespie had foreshadowed the line the discussion should take.

Dr G. A. Gibson, in expressing his admiration of the excellent piece of work which had been brought before the Society, said he thought Dr Gillespie's paper was a very sufficient answer to the taunts that were often made against "the test-tube clinician," of whom Sir William Roberts was the great type. He thought the paper answered a number of the objections that had been urged against Sir William Roberts' views. Dr Gillespie had brought before them a vista of great possibilities. Speaking as one whose practical acquaintance with the testing of gastric contents only went the length of enabling him to determine whether, in doubtful cases of gastric cancer, any free hydrochloric acid could be detected, he had found the communication now before them full of the greatest interest. Dr Gillespie had shown how after meals with little or no proteid material the amount of free acid was very large, and in the frequency of heartburn after one of the well-known national dishes—porridge—they had a homely illustration of the fact. There were some points he would like Dr Gillespie to touch upon, such as what he had found as to the amount of acids present in cases of gastric dilatation. He would be glad if he would tell them what was the exact nature of the acid material present in such cases. There were, no doubt, present in large quantity organic acids produced by bacterial action, but what was the condition with regard to the hydrochloric acid? He also wanted to ask if in cases of ordinary painful dyspepsia, due purely to neurosis, Dr Gillespie had found any constant relationship between the amount of hydrochloric acid and the extent of the pain from which patient suffered.

Dr Affleck said he thought Dr Gillespie's paper was an interesting and valuable one. It had impressed him very much indeed, and informed him upon some important points. Modern methods of investigation of digestion had been of great value to the physician, and were fraught with promise of great value for the future. The subject of dyspepsia was until recently one of extreme difficulty, and even repellent to the student or practitioner,—there was something so indefinite about it, both as regards means of diagnosis and means of treatment. When a person had hyperacidity, they were in the habit of appealing to alkalies to neutralize it, and when there seemed to be a deficiency of acid they resorted to the use of an acid. That was about all that was included in the treatment of dyspepsia until comparatively recent times. It was when Kussmaul began to treat stomach diseases topically, and to apply modern chemistry to the study of the contents of the stomach, that new light began to appear upon the subject. The chemistry of the stomach was a thing of profound interest, and finality had not yet been attained even regarding our knowledge of normal digestion. This was evident from Dr Gillespie's paper. The stomach was a chemical laboratory of a peculiar kind. It was a living laboratory. If normal gastric chemistry was difficult, morbid was more difficult. They had to go behind mere chemistry. The processes that went on in the stomach, though they might be closely simulated by experiment, must be modified to some extent by the vital processes going on in the stomach wall. Yet it was only by researches like Dr Gillespie's that they could come to know approximately what was going on inside the stomach. They had to take into account, as Dr Gillespie had said, the condition of other organs—of the stomach itself as regards its mobility, of the blood circulating through it, etc.—if they were to deal in a rational and effective manner with dyspepsias. He thought Dr Gillespie's experiments lacked repetition under similar conditions. No doubt it was very difficult to carry on such investigations, but the results had to be received with some amount of deduction, unless a great many experiments of the same kind had been performed.

Dr Noël Paton said he rose to congratulate Dr Gillespie upon the good, honest piece of scientific work he had done. He thought the attainment of such results should stimulate medical men in favour of scientific researches, and bring before them the desirability of having in connexion with each hospital a well-equipped laboratory in which such investigations could be carried on. It also illustrated the value to medical men of a proper scientific education, which they at present did not get. Consequently they were, as a rule, without sufficient knowledge to carry on such investigations. He thought Dr Gillespie's experiments were of considerably greater value than had been claimed for them. He agreed with Dr Affleck as to the danger of accepting conclusions drawn from results obtained with dialysers, but thought the results obtained by Dr Gillespie applied to true gastric digestion. Dr Gillespie should have emphasized the fact that these were percentage results and not total results. He would like to know upon what grounds Dr Gillespie made the positive statement that soda increased the secretion of hydrochloric acid.

Dr Affleck said he would like to add a few words to what he had said about two clinical points. The first was, that the splashing sound which was obtained in the majority of cases of dilated stomach was not diagnostic of it, as was generally thought, but might be got from a dilated intestine. He referred to a case he had recently seen which illustrated this point, in which splashing was obtained from a greatly dilated ascending colon, the result of malignant disease of the hepatic flexure. The second point was, that in his experience in cases of gastric ulcer the pain was more frequently referred to one side, usually the left, than to the epigastrium.

The President asked to be allowed to suggest to the Society that they should emphasize in their minds the excellent suggestion of Dr Noël Paton, Why should not the Society have a laboratory? They would first have to have a local habitation. If they had a house, then they would be able to have a laboratory.

Dr Stockman said the interest and accuracy of such an investigation depended upon the accuracy of the methods employed. The chemistry of the physiologist and the physician had to be looked upon with the greatest suspicion, as it was sometimes very inaccurate. Imperfect methods were used, and from these results were calmly deduced which were possibly right, possibly wrong. One had no conviction that they were right. It was often found that they were soon entirely altered by some new investigation. He contended that the indicators used in estimating the amount of uncombined hydrochloric acid did not give accurate results. He also objected to the formula Dr Gillespie had given, and to his treating it as if it were a true chemical formula. He did not deny that there was a certain relationship between the combining powers of hydrochloric acid and albumen, but what that was we had not any evidence to say. No doubt Dr Gillespie had carried out his experiments in the best way at present known, but he wanted to point out that they were inaccurate. The man whom Dr Gillespie had experimented upon was a patient of his. He washed out his stomach and found it to contain very nauseous matter, in which there was little hydrochloric acid. But Dr Gillespie had diagnosed the case as one in which there was excess of free hydrochloric acid several hours after food. Nevertheless he (Dr Stockman) afterwards effected a cure by giving the patient nitric acid, which would further increase the acid in his stomach.

Dr Noël Paton said he thought Dr Stockman was somewhat unfair to Dr Gillespie in his criticism.

Dr G. A. Gibson said that in the success of the purely empiric treatment to which Dr Stockman seemed to have had recourse—the administration of an acid—they had some confirmation of the belief that by giving an acid the amount of acid that a patient's stomach would secrete was diminished. He asked Dr Gillespie to enlighten them upon this point.

Dr Taylor said he admired the careful manner in which the subject had been investigated by Dr Gillespie, although all such physical methods of investigation merely touched the hem of the garment enfolding such a complex subject as that of indigestion. He pointed out that there was the element of life and the vital manifestations to be taken into consideration, and these could not be discovered in the laboratory nor displayed on charts. For example, when anything acid was put into the stomach, the organ, by a sort of natural resentment, endeavoured to neutralize it, and the amount of its resources in this direction could not be estimated, nor the necessary corrections made for them in any calculations dealing with the subject. Again, the power of the saliva in converting starch into sugar ceased if much sugar was eaten and its powers were not called into action. In connexion with dilatation of the stomach, he thought they were too apt to regard it as due entirely to fermentation. There was a nervous element not to be forgotten, which relaxed and dilated the stomach, either simultaneously with, or in opposition to, the physical force applied from within by mechanical distention, and which acted (in a manner) voluntarily in liberating or confining the gaseous or other contents of the stomach, by relaxing or restraining its valves. This action was so powerful and so independent, so completely governed by the nervous system, as to be able to overturn any merely chemical calculations.

Dr Church said he thought that the vital part of the question was what required most carefully to be studied, and that too much importance had been attached to the chemical part. He referred in illustration to the phenomena seen in the gastralgia that occurred in neurotic and chlorotic patients.

Dr G. M. Robertson said he would like to make some remarks from the point of view of his own special experience, namely, of asylum patients. The subject of gastric digestion had received a good deal of attention lately, under the impression that deleterious substances were produced in the stomach in imperfect digestion which might produce mental derangement of certain kinds. The stomach had been daily washed out in cases of melancholia with distinct advantage. It was certain that in acute delirious insanity digestion is scarcely carried on in the stomach at all. In some cases it had been found that after several hours there was no digestion and no absorption. This proved that digestion was not entirely a physical process. In cases in which there were improper fermentations going on in the stomach associated with the presence of micro-organisms, administration of antiseptics, such as solutions of chlorine, quinine, and beta-naphthol, had been tried at Morningside, Larbert, and Continental asylums with benefit to many cases of insanity. As a result of these experiments they were satisfied that by keeping the intestinal tract fairly aseptic there was a better chance of recovery. Another interesting point had been ascertained with regard to the unpleasant effects often produced by the continued use of bromide of potassium. Epileptics taking this drug constantly, were very apt to suffer from gastric and intestinal derangement, acne, etc. It had been suggested that these were due to the dulling of the intestinal reflexes, and the consequent production of an abnormal state permitting improper fermentations and auto-intoxication by septic products. Acting upon this view beta-naphthol had been given, along with bromide of potassium, with the result that the evil effects usually produced by bromism were greatly obviated.

Dr John Thomson said that as Dr Gillespie had referred to some statements of his, he would like to say a word or two about his experience of the treatment of vomiting in young children. He had practised washing out the stomach with warm water in such cases for some years, and he regarded it as the most effective means in most cases of stopping vomiting in infants. Lately he had ascertained an interesting point. He found that in some cases the mere passing of the tube gave as good results as if the stomach had been properly washed out. The passing of the tube seemed in these cases to have a soothing effect upon the nervous apparatus concerned in vomiting.

Dr Gillespie, in replying, said the reason why he had taken up the chemistry of the subject so fully was that he had intended at first to give a paper on the chemistry alone. He could not go into everything. He had left out much of what he had written. Consequently one or two of the criticisms that had been made fell to the ground. Dr Paton had objected to his arguing from percentage results; but similar experiments had been done in Germany on dogs, and the results, which were obtained from analysis of the total contents, corroborated his own very fully, except regarding combined acidity, which had not been worked out. There was one point he had missed in showing the diagrams of the charts of the patient's stomach. He had shown that the free acid never appeared till about the second hour, but he had forgotten to mention that the patient never complained of heartburn until free hydrochloric acid appeared. The acids produced when putrefactive changes went on in the stomach were chiefly butyric, acetic, and lactic acid. Occasionally marsh gas was formed, and also sulphuretted hydrogen. Regarding the relation of acidity to the production of gastric ulcer, some experiments had lately been done upon dogs which threw light upon the matter. It had been found that if the mucous membrane of the dog's stomach was lacerated by glass, and the acidity of the dog's stomach was normal, no ulcer occurred; but if at the same time hydrochloric acid was given, a typical round ulcer formed. He still held that his case was one of neurotic dyspepsia, though Dr Stockman did not think so. The patient's stomach was certainly somewhat dilated, but there was absolutely nothing else abnormal about it, except that when free hydrochloric acid appeared he had heartburn, which no one would have if in health. With regard to Dr Affleck's desire that the experiments should be repeated several times under similar conditions, he had performed many other experiments which bore out his results. He merely had not brought them before them.

He believed that it had been shown that soda did increase the hydrochloric acid secretion. It had been shown upon the fasting dog. Dr Stockman was almost a pure chemist, and like all pure chemists he scoffed at physiological chemists. Pure chemists would not trouble themselves about vital problems. He had always used the same indicator, and had attained a proficiency in using it. He thought it was reliable. He did not mean that the formula he had given was to be regarded as similar to a benzene ring. It was merely a convenient graphic representation. Regarding Dr Stockman's point as to effecting a cure by giving nitric acid, Ringer recommended nitric acid to be given for hyperacidity before meals, and stated that it diminished the outflow of hydrochloric acid afterwards.

Dr Stockman said there was no evidence in support of that statement. It was a pure speculation.

Dr Gillespie, continuing, said, with regard to what Dr Church had said, he did not agree with him that gastralgia was so common. He thought it was often just an expression of hyperacidity, or some morbid condition of the stomach wall, and not a pure functional thing.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION LIV.—MEETING III.

Wednesday, 11th January 1893.—Prof. A. R. SIMPSON, *President, in the Chair.*

I. *Dr Haig Ferguson* showed some PHOSPHATIC CALCULI passed per urethram, in which the nucleus of the largest was formed by a silk ligature. The patient fully a year ago had her ovaries and tubes removed by abdominal section. There had been long-standing pelvic inflammation, as a consequence of which there were dense adhesions, and much difficulty was experienced in completing the operation. Some months thereafter symptoms of pelvic abscess developed. The abscess first ruptured into the rectum, but after a time the rectal opening closed up, and it was then punctured per vaginam. The patient's condition was much improved after this, but soon afterwards great vesical irritation developed, with pus in the urine. Some small phosphatic calculi about the size of millet seeds, many of which had sharp spike-like projections, were subsequently voided spontaneously. As, however, the irritation still continued, Dr Ferguson dilated the urethra, with the result that the largest calculus, which he showed, was got rid of, having as its nucleus one of the silk pedicle ligatures used in the abdominal section a year previously. Since then the patient has done well.

II. *Dr J. W. Ballantyne* showed—(1.) A specimen of CYSTS ON THE FŒTAL SURFACE OF THE PLACENTA. He had obtained the placenta from a recent confinement case. The mother was 35 years of age, an viii.-para, and suffered from epileptic attacks. The labour was rapid and natural. The child was a well-developed male, and had the cord twisted once round the neck. It was born living, and is now alive and well. The placenta came away, but the membranes were retained, and during the process of separation they were torn in great measure from the after-birth. During the extraction of the placenta he noticed that on its fœtal surface were two cysts, each about the size of a greengage. A more detailed examination of the after-birth revealed the following characters:—It was nearly circular in form, measured about 17·5 cms. in diameter, had a circumference of 53 cms., and a thickness of 2 cms. The umbilical cord was nearly centrally inserted, and had a total length of 70 cms. (nearly 27·5 inches). Quite close to the insertion of the cord, and on the fœtal surface of the placenta (from which the amnion was detached) were two large and one small cyst. The two large ones measured 5·5 by 2·3 cms. and 5 by 2·5 cms. respectively, whilst the small one was scarcely 1 cm. in length. When the specimen was fresh the cysts appeared to contain a slightly opalescent, pale yellow fluid, and on the surface of both the larger ones could be seen a very fine bloodvessel. Passing between the two large cysts was one of the principal branches of the umbilical vessels.

(2.) AN ABORTION-SAC, which had been sent to him as a probable example of *retarded development of the embryo.* Dr J. D. Williams of Dowlais, to whom he was indebted for the specimen, had kindly furnished the following interesting history:—Mrs E., 32 years old, has been married for ten years, is the mother of three children, and has had in addition four miscarriages. The menstrual flow first appeared at the age of 13, and has been regular. Her *first* pregnancy terminated at the full term in the birth of a female infant (seventeen months after marriage); the *second* ended in an abortion at the third month from the date of menstrual cessation, and the degree of development of the fœtus, membranes, and placenta corresponded to the calculated time of gestation. The *third* pregnancy went to the full term, when a female infant was born. The *fourth* went to the eighth month from the date of catamenial cessation, when the uterine contents were expelled. The fœtus (a male) was no larger than one at the fourth month of intra-uterine life, and in other details corresponded to a fœtus of that age. It was in a macerated state, but there were no signs of putrefaction. The mother had suffered from ill health (loss of appetite, weakness, etc.) for two or three months immediately before the emptying of the uterus. The *fifth* gestation, like the first and third, went to the full time, when a daughter was born. The *sixth* ended prematurely, like the second and fourth. It specially resembled the fourth, for, at the end of the eighth month of menstrual cessation, a dead male fœtus no larger than one of four months' development was expelled. Her last catamenia occurred in the beginning of August 1891. About Christmas she experienced what she calls a peculiar change coming over her; and from that date she was in bad health till the uterine contents were expelled on 23rd April 1892. The abortion-sac was intact when expelled. On opening it about 2 oz. of turbid, yellowish-brown, odourless liquor amnii escaped. The fœtus was of the size reached at the fourth month; the male sexual organs were clearly recognisable; its skin was white and sodden; the joints were loose and the limbs very flabby. The fœtal half of the umbilical cord was thin, being little more than a thread; but the placental half was thick, swollen, and gelatinous. The amnion was grayish-brown in colour, and presented, towards the placental attachment of the cord, a number of isolated, pinhead-sized, grayish points. In the substance of the placenta there were two hæmorrhages, each measuring about 1 cm. in diameter. Some of the cotyledons were fibrous. The *seventh* pregnancy came to an end on 2nd December 1892. She had last menstruated on the fourth week of August, and the age of the gestation was therefore about three months. The membranes were not intact when the abortion was expelled, but every piece of bloodclot was carefully examined and no fœtus found. The abortion was of the size of a hen's egg, and had an amniotic cavity which was certainly not large enough to contain a fœtus of the size usually attained at the third month. Several hæmorrhages were found in the decidua serotina now developing into the placenta; some of these were recent, others were of older date and fibrous in character. Inside the amniotic cavity of the ovum was seen the somewhat swollen umbilical cord; it was 4 cms. in length, and showed at its free end a curved grayish structure about 4 mms. in length, which Dr Williams thought might be the embryo retarded in its development. Dr Ballantyne was inclined to regard it as the torn end of the cord, and to consider that the embryo had passed away with the liquor amnii when the abortion took place. A microscopic examination would be necessary to settle the matter. Whether or not the case turned out to be one of delayed fœtal development, it was of interest from the clinical standpoint. The mother, who was neither syphilitic nor tubercular, had had full-term labours and abortions alternately; all the full-time infants were females, all the aborted fœtuses were males. It would perhaps be paradoxical to speak of her case as one of "habitual alternating abortion."

(3.) A FŒTUS WITH THE ERUPTION OF MEASLES, which had been kindly given him by Dr T. B. Darling, in whose practice it occurred. The mother had not suffered from measles previously, but at the end of the fifth month of her first pregnancy she took the infection, and when the eruption was beginning to fade gave birth to this fœtus. Several spots were to be seen on the fœtus (a male), especially on the face, back, and legs. The fœtus was alive when born, but it was premature and did not survive. The mother did well.

(4.) A FŒTUS WITH GENERAL DROPSY, which he had received that afternoon from Dr J. D. Williams of Dowlais. The mother was 28 years old, and had had five children and one miscarriage (at the tenth week). She was married when hardly 18 years of age. The child was born on the night of the 8th inst. Premature labour had been induced on the night of the 7th by means of Barnes' bags. The membranes were ruptured on the 8th, and one hour afterwards the child was born. Labour was induced on account of general distress caused by the excessive distention of the maternal abdomen, which was rapidly increasing. Three and a half quarts of liquor amnii escaped when the membranes were ruptured. The dropsical infant, a male, weighed 6 lbs., had a distended abdomen, and an anasarcous integument. The placenta weighed 2 lbs., was very friable and œdematous, and showed two small hæmorrhagic infarcts. The umbilical cord was 11 inches long.

III. *Dr Millard* showed—(1.) AN AMORPHIC FŒTUS expelled during the third stage of labour, a report of the dissection of which would be made at a future meeting; and (2.) A NEW PESSARY for prolapse of the uterus.

IV. *The President* showed a very typical specimen of GENERAL FŒTAL DROPSY, a report of the dissection of which would be made at a future meeting of the Society. The specimen had been sent to him by Dr Mann of Ashton-under-Lyme.

V. *Dr J. Haig Ferguson* read the first half of his paper on UTERINE ROTATION; ITS CLINICAL IMPORTANCE IN PREGNANCY AND LABOUR. The discussion was postponed till the reading of the rest of the paper.

VI. *Dr J. W. Ballantyne* read, for *Dr J. Halliday Croom*, a NOTE OF A CASE OF ACEPHALIC ACARDIAC FŒTUS, which appears at page 802 of this Journal.

VII. *Drs Berry Hart* and *Lovell Gulland* read their CASE OF ADVANCED PREGNANCY IN AN APE (MACACUS RHESUS), STUDIED BY FROZEN SECTIONS AND CASTS.

Dr J. W. Ballantyne wished to learn from Dr Gulland whether his researches on the placenta had thrown any light upon the problem of the transmission of certain diseases from mother to fœtus in utero. Experiments upon the passage of bacilli through the placenta had given very contradictory results, and he thought that in all probability the conflicting evidence was due to the different condition of the placenta in the various experiments, the presence in it of blood extravasations, etc.

Dr Gulland agreed with Dr Ballantyne that these experiments had not led to any definite result, and thought that, besides the factors in the uncertainty which had been mentioned, different forms of bacilli might probably pass through the placenta with different degrees of facility.

VIII. *The President* read his paper on THE INDUCTION OF LABOUR BY MEANS OF GLYCERINE INJECTIONS IN A CASE OF PUERPERAL ECLAMPSIA, which will appear in a future number of this Journal.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

MEETING III.—*Jan.* 25, 1893.—Dr ROBERT POLLOK, *President, in the Chair.*

Dr Lindsay described three cases of MALFORMATION OF THE EXTERNAL GENITAL ORGANS occurring in one family, and showed one of the children. He was of opinion that all were hypospadiac males with undescended testicles, although two of them had been brought up as girls. The parents and six other children of the marriage were naturally formed.

The President read a paper on the PROPHYLAXIS AND TREATMENT OF ABORTION. He said that there was a popular belief that very early abortions required neither care nor attention, but he was rather inclined to emphasize the very opposite, viz., the earlier the abortion the longer rest and the greater care. He classified the cause under five headings,—Traumatic, Mechanical, Neurotic, Toxæmic, and Inflammatory. In discussing the treatment he dwelt upon the necessity of thoroughly emptying the uterus. He had always found it very difficult to do this with the finger, and ovum forceps he had found total failures. If rest and sedatives failed to prevent it he plugged, and after from twelve to twenty-four hours usually found the complete ovum come away on removing the plug. If not, he plugged again. When there was retention of a part he dilated with Smith's metallic bougies, and curetted. After douching he mopped the cavity with perchloride of iron to arrest hæmorrhage, and inserted a strip of iodoform gauze, plugging the vagina with the same. This was removed in twenty-four hours, and a hot douche used night and morning.

Drs Reid, Cameron, Sloan, Turner, Miller, Black, Gray, and Howie took part in the discussion, and the President replied.

ROYAL MEDICAL SOCIETY.

Jan. 20, 1893.—Dr Fowler in the chair.

Dr Berry gave a Lantern Demonstration on Surgical Cases, to the interest of which he greatly added by describing the method of operation employed in some of the cases.

Dr Turner, in referring to the value of this form of lantern teaching, proposed that the Society should start an album of photographs of all cases shown in these demonstrations, and offered to present copies of those exhibited on this occasion with which to begin the collection.

Dr Lawson Dick read two interesting communications, the first being a case of "Tuberculosis of the Female Genital Organs." That a true tubercular condition had occurred was amply proved by a demonstration of the bacilli according to Koch's method. Dr Dick was of opinion that the mode of infection was most probably by the blood stream, the bacilli being carried from a tubercular focus in the lung or elsewhere, and finding a nidus in the Fallopian tubes. He believed that operative interference was of little use in such cases. The second case was one of "Intestinal Obstruction following Laparotomy," which had been performed for the purpose of removing the ovaries. All went well for ten days, when sudden vomiting, with abdominal pain and distention, came on. In spite of all treatment the patient suddenly collapsed on the thirteenth day, and the abdomen was re-opened in the expectation of finding some localized collection of pus. At the post-mortem a tight stricture was discovered two feet above the ileo-cæcal valve, the intestine being quite contracted below and much distended above the stricture. The question was whether this spasmodic stricture, which seemed to be such because of its ready yielding to a stream of water passed along the intestine, could be the cause of death.

Dr Berry said that he did not see how mere spasm could cause death, and that no spasm of the gut could remain for twenty-four hours after death. It was more probable that the stricture had been caused by chronic peritonitis, of which various patches were found, and that the stream of water forced through had undone the adhesions.

Dr D. Stuart read a dissertation on "The Paths of Infection in Tuberculosis." Recognising tuberculosis to be an infectious disease, he discussed the main sources from which human beings may get the virus, the important ways by which the virus enters the body, and the chief channels along which it passes within the body. He spoke of the entrance of the poison by the respiratory passages, by the alimentary canal, and by the skin surfaces, and then of the alleged hereditary transmission of tuberculosis, and of the blood-stream as a path. Dr Stuart concluded by stating that it has been established that tuberculosis is an infectious disease; that human beings get it chiefly by the inhalation of tubercle bacilli in air-borne dust derived from dried sputum, and that they may also get it from tubercular milk and flesh; that within the body the virus passes from one part to another by means of the lymphatic and blood-vessels, and that there is no evidence of the hereditary transmission of the disease.

Jan. 27, 1893.—Dr Crerar in the chair.

Dr Rainy read the history of a case of "Abscess of the Liver." The case was most concisely and clearly put together, and led to some interesting discussion, in which the treatment of such a condition, and of gall-stones as its cause, was specially dwelt upon, and the probable method of entrance of micro-organisms considered. Unfortunately the case cannot be reproduced in these pages, as Dr Rainy intends to publish it elsewhere.

Mr Hossack next gave a communication on "Bullet Wounds, their Prognosis and Treatment." A patient was shown in whose cheek a bullet could be felt, which had lodged there many years ago, and caused no inconvenience. Mr Hossack added much to the interest of the paper by exhibiting several kinds of bullets when dwelling upon the varieties in use. Instances were quoted to show the extremely erratic course taken by bullets, and how the most trivial circumstance will deflect them when travelling at a high rate of speed through tissues. But the Manlicher rifle bullet, it seems, which was used in the late Chilian war, tolerates no obstacles, but pierces through everything in its course. If it strikes a bone at less than 500 yards there is greater splitting and shattering. Arguing from this fact, and from experiments of his own, Mr Hossack expressed it as his opinion that "the greater the force the greater the shattering," and quoted various authorities in support of this theory. In this he entirely differs from the usual teaching of the Edinburgh School. He illustrated by contrasting the holes made by a brace and bit in boring through wood. If the instrument is turned slowly with moderate pressure the hole produced is neat and smooth, but it is torn and ragged when great pressure and speed are employed. The characters of wounds of soft tissues were next dwelt upon, and some interesting cases quoted, and the lines of treatment of bullet wounds indicated.

Feb. 3, 1893.—Dr Rainy in the chair.

Mr Craig Dunn read an interesting and comprehensive history of a patient who had been injured mentally and physically by the continued use, or rather abuse, of Hypnotism. The case is the only one recorded in this country in which marked and permanent injury has resulted from the repeated use of hypnotism. Charcot has described a parallel case. We believe that no case has ever yet been known of injurious effects resulting from the judicious use of hypnotism as a therapeutic agent in the hands of medical men. The chief symptoms of the case in question were irritability and loss of sleep, with demoralisation and exhaustion of the nervous system. The facts read were most interesting, and well calculated, as Mr Dunn observed, to raise interest in that powerful and somewhat dangerous weapon, hypnotism. The patient whose case had been read was then hypnotised before the Society, so that by means of emphatic post-hypnotic suggestion an attempt might be made to release him from the cowardly influence of the so-called "professor" who had profited so much himself at his victim's expense.

Dr Fowler next read his dissertation on "The Cardiac Changes in Renal Disease." These he discussed according to the conditions under which they occur, noting their frequency, their clinical features, and most especially their pathology. He criticised the theory of Saundby of Birmingham, and the views of several other authors on the pathology of the condition. Mr Briggs and Drs Wallace and Stuart spoke on the points brought forward in the dissertation. After this the subject of Hypnotism was resumed.

Dr Harkness laid before the meeting the motion, that "Hypnotism is of value as a therapeutic agent in Medicine," and quoted a series of cases in which he had successfully used it. This was seconded by Mr Stewart; and a discussion upon Mr Craig Dunn's interesting communication and the motion ensued.

Mr W. R. Martine moved the direct negative to the motion. A number of gentlemen expressed their views, and on a division the affirmative was carried unanimously.

Feb. 10, 1893.—Dr Carmichael in the chair.

Mr W. B. Bell gave a well worked up communication on "The Internal Use of Iron in the Treatment of Erysipelas." He quoted the opinions of many of the leading medical men of the present day, whose statements on the subject he had consulted. The views of most of them were favourable to the use of iron. Mr Bell specially emphasized the fact that the tinct. ferri muriatis of the *Ed. Pharmacopœia* should be used, in doses of xx. ♏, every two hours, day and night. The want of success in the use of iron, he believed, was due to the fact that the tinct. ferri perchloridi was too often employed. He said that probably the greater amount of rectified spirit in the first preparation formed with the muriatic acid ethers which acted as antiseptics after absorption into the blood. Mr Bell recommended the judicious administration of purgatives, with free stimulation and nourishment.

Dr Giles said that from his practical experience of the value of iron in treating erysipelas, he had felt inclined to doubt its worth, but that in the face of the mass of facts brought forward by Mr Bell he could not push his views.

Dr George C. Cathcart read a paper, which was listened to with the greatest interest, on "The Art of Voice Production in Relation to Speech." He said that it is strange how little people know or care about the voice; not even those whose highest success in their profession depends on their voice think it worth while to pay particular attention to it. They inflict upon their patient and long-suffering hearers an infinite variety of whines, growls, mouthing, and drawling in disagreeable, untrained voices. The neglect of voice culture falls heaviest on students who study in faculties where they cannot choose their lecturers. As the instruction is entirely oral, indistinctly uttered lectures have no interest, and the incomplete notes made of them are comparatively valueless. Dr Cathcart drew a very vivid contrast between this kind of speaking and the effect of a thoroughly trained, musical, clear, mellow voice. Then he explained how such a voice can easily be obtained by even those who happen to be the least gifted by nature in this respect. By diaphragmatic breathing, distinguished from clavicular and costal breathing, a wonderful degree of control over the respiratory function is gained. A free tone is procured by an open throat and a semi-relaxed condition of its muscles. He then told how a perfectly distinct articulation is acquired. He touched on the oral training of the deaf, and noted that the three best physiological alphabets were all invented by Scotchmen,—Dr Neil Arnott, Dr Wyllie, and Mr Alex. Melville Bell. He ended by speaking of the rate of speech, and of how to speak slowly, and yet not to *seem* slow. A first-class orator like Mr Gladstone only uses 100 to 120 words a minute. The mass of speakers go at the rate of 200 words a minute. Hurry destroys the effect; due proportion should be maintained. Though the Royal Medical Society has been established for 150 years as a debating society, no paper on this subject has ever been read to it before now. The success of the Society depends in large measure on good speaking. The reading of the dissertations, and the discussions on them, form the chief part of the business of the Society. The interest of the meetings must vary in ratio with the proficiency of the speakers in the art of voice production. In recognition of the value of this communication, Dr Cathcart was requested to present a copy of it to the Society.

Mr T. B. Yeoman's dissertation on the "Ætiology of General Paralysis" was next read. He referred to the steady increase of the disease in the present day, and pointed out the short time that it has been a recognised condition. He dealt with the subject according to its predisposing and exciting causes. He laid much stress upon the influence of alcohol and sexual excesses as acting as causes, but stated that the great struggle for existence and its consequent attendant mental and moral worry more than account for the very general prevalence of the disease.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

Chloralose: A New Hypnotic.—Hanriot and C. Richet recently reported to the Académie des Sciences the results of a research on the physiological and therapeutic action of a new substance which they call "Chloralose" (*Sem. Méd.*, January 11th). This is a crystallized body, formed by the reaction of anhydrous chloral and glycose on each other, with elimination of water. Chloralose has a bitter taste, and is fairly soluble in hot water, but in cold water only in the proportion of 6 grammes to 1 litre. In a dose of 60 centigrammes per kilo. of body weight it is toxic to the dog, but in much weaker doses—for example, 2 centigrammes per kilo.—it produces very marked hypnotic effects. It is consequently more active than chloral. It has an excitant action on the medulla, the reflex movements being considerably exaggerated. Its physiological action may therefore be summed up in the statement that it has a hypnotic effect on the encephalon and an excitant effect on the medulla. By experiments made on themselves the authors ascertained that doses of 50 centigrammes, and even 1 gramme, could be given to man. These, however, must be considered heroic doses, and a dose of 20 or 40 centigrammes is sufficient to induce dreamless, quiet sleep, without any sense of fatigue, headache, or dyspepsia on waking. In certain cases, patients unable to tolerate chloral or morphia have obtained refreshing sleep with the help of chloralose.—*British Medical Journal*, 28th January 1893.

THE THERAPEUTIC ACTION OF PROTEINE IN A CASE OF ACTINOMYCOSIS.—A case of actinomycosis of the neck and face, occurring in a young man, 19 years of age, is reported by Ziegler (*Münchener Medicin Wochenschrift*, No. 23, 1892; *Revue de Thérapeutique Générale et Thermale*, July 20, 1892), in which the injections of proteine produced satisfactory results. Surgical interference was opposed by the patient, though some scraping practised showed that yellow granulations had invaded the muscular tissue. About two months after the patient had been admitted into the hospital, injections of proteine extracted from cultures of the *Staphylococcus aureus* were begun. The injections were introduced into the infiltrated tissues, the procedure being followed by a slight pain, which only lasted for a few minutes, and after a few hours by a slight feverish reaction, characterized by local redness and pain, extending a little beyond the point of injection. At only one time did the patient, following an injection, suffer general *malaise* and a rise of temperature to 39°·5 C., preceded by chilly sensations. The amelioration, however, was noticeable; the tumefied condition of the left cheek disappeared almost entirely, and the inferior maxillary was again able to perform its normal movements. The author attributes these good effects to the injections of proteine, a substance analogous to tuberculin in composition.—*Therapeutic Gazette*, January 16, 1893.

BELLADONNA IN STRANGULATED HERNIA.—V. B. Zagorsky (*Meditzinskoië Obzrenië*, No. 23, 1892) gives details of five cases of incarcerated inguinal (4) and umbilical (1) hernia, in which, after failure of taxis, he resorted to the internal administration of extract of belladonna (¼ gr. every hour), the result being that in every one of the cases spontaneous reduction took place after four or six doses. This effect is attributed to the powerful anti-spasmodic properties of the drug.—*British Medical Journal*, 4th February 1893.

THE COMBINED IODIDES IN THE TREATMENT OF SYPHILIS, ESPECIALLY OF THE NARES.—In the July number of the *Revue de Laryngologie, d'Otologie, et de Rhinologie*, Dr G. Darzens advocates a combination of the iodides of potassium, sodium, and ammonium in cases of urgent specific disease, where the prompt effect of the iodide is highly desirable. In a man of thirty-seven, with severe syphilitic lesions of the nasal fossa, who had been vainly treated by large doses of the iodide, as well as other anti-syphilitic remedies, he gave small doses of each of the three iodides and biniodide of mercury, and obtained a most satisfactorily rapid impression, without iodism or other unfavourable symptoms. He explains the result upon the idea that the other salts are eliminated more rapidly, and the potassium iodide thus retained in the system until the others have disappeared, claiming that the kidneys excrete a limited proportion of any such salt, and tend to retain the urine at approximately the same specific gravity. The intolerable headaches disappeared in a week, and the nasal lesions and dacryocystitis were practically cured in six weeks.—*Therapeutic Gazette*, January 16, 1893.

MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

Berlin. Klin. Wochensch., No. 5, 1893.—Filehne calls attention to a new hypnotic, Hypnal-Höchst (the addendum Höchst is, I suppose, the name of the place on the Main in Bavaria where the hypnal is manufactured and patented). Some of the hypnals of commerce are physiologically inactive; but Hypnal-Höchst, on the contrary, is active. Its formula is CCl_3, CH (OH_2), $C_{11}H_{12}N_2O$; it melts about 67°·5 C.; it is easily soluble in hot water, and gives, with iron chloride and sodium nitrite, the characteristic reactions of antipyrin. Hypnal is a combination of chloral hydrate and antipyrin, one molecule of each.

The soporific and tranquillizing properties of hypnal depend not alone on its contained chloral (45 per cent. with 55 per cent. antipyrin). In animals, efficacious doses of hypnal need not be much higher than those of chloral; whereas if the chloral was alone the determining cause of the sopor, the dose of hypnal would require to be doubled. In experiments on animals the hypnal did not seem to damage the vaso-motor system and the heart-beat at all, when a corresponding dose of choral would certainly have done so. Such evil effects only show themselves when the dose is very large, and only proportionate to what would be an equal dose of chloral.

When given to human beings it may be dissolved simply in water, 1 to 10. It has little taste, and needs no corrigents on that score. Vomiting was seldom occasioned by it in the experiments. For grown-up people the dose is 1, 1·5, to 2 or 3 grams. Its hypnotic effects appear in from ten to thirty minutes.

In 124 trials made on men it was without effect 27 times, and in 20 the impression made by it was slight. In moderate conditions of excitement occurring in the insane, and in delirium tremens and chorea minor, its effects were good, but in violent excitement chloral and hyoscin were more trustworthy. It seems also useful in insomnia, but not so much so in sleeplessness depending on pain.

Ibidem.—Dr H. Rosin recommends tincture of iodine as a very sensitive test for biliary colouring matter in the urine. He takes two drops of the tincture to about a quarter of a test-tube of spirit, or, more exactly, 10 cc. of the tincture to 100 cc. of the spirit, and thus has a diluted solution of nearly the colour of port wine, and which can easily be kept ready prepared in a bottle. Some of the urine to be examined is put into a test-tube, and some of the diluted iodine, say 2 to 3 cc., is cautiously poured into the tube containing the urine, so that the iodine floats in a layer above the urine and does not mingle with it. Immediately, or after a minute or so, if biliary colouring matter is present, the layer of contact shows a grass-green ring, which may remain visible for hours. If no biliary colouring matter is there, the urinary colouring matter is merely bleached, so that the ring is light yellow or almost colourless.

Centralblatt f. Bakteriologie u. Parasitenkunde, No. 3, 1893.—Prof. Tizzoni and Dr Centanni give a communication regarding the transmitting of immunity against rabies from the father to the offspring. Their experiments on dogs are related in detail, and they think themselves justified in asserting that they have demonstrated in a quite indisputable manner the possibility of the transmission of immunity by means of the semen: that for the occurrence of this transmission no peculiar qualities of the mother are needed, because with the same father (immunized) it takes place without distinction where the mothers are various; that this immunity is shared, without distinction, by all of the broods alike,—their physical qualities, as the colour of the hair, even when they are more like those of the mother, have no influence on the inheritance of the father's immunity by the young ones; that the immunity inherited by the broods is slighter than that possessed by the father; that the immunity handed over by the sperm is lasting, in contradistinction to that acquired through the blood or the milk: in short, by this inheritance the capacity is transferred to the elements of the new organism, independently of any participation of the mother, of generating for an undeterminate time the stuff on which immunity depends.

This discovery is considered by the authors to be of great scientific and practical importance. The results of their experiments are, above all, in perfect agreement with our present embryological knowledge, according to which at the time of impregnation the head of the spermatozoon, as male pronucleus, blends with the female pronucleus of the ovule, and consequently each new element which arises from the cleavage of the fertilized ovum must possess a part of the mother and a part of the father plasma, and, of course, the qualities inherent in both.

These results also answer a question of great biological importance, namely, the question, about which there has been so much wearisome strife, of the inheritance of acquired qualities, and form a powerful support for the theory of the mutability of species in Darwin's sense.

The authors think that with the help of their results we may better understand the gradual decline, and even disappearance, of certain infectious diseases which formerly had been very virulent, if we accept not only a selection of less susceptible individuals, but also the inheritance of the congenital immunity of those who had overcome the attack of the infectious disease.

The practical importance of their researches is easy to comprehend, if one thinks that if it is possible to breed races of dogs immune to rabies, then one of the main sources of the transference of this disease to man would be blocked.

SURGICAL PERISCOPE.

By Kenneth M. Douglas, M.D., F.R.C.S. Edin.

Removal of Inner Two-thirds of Clavicle for Sarcoma.—Mr Arnold Caddy (Calcutta) records the case of a patient, a healthy man, aged 26, in whom, a year after a fall upon the shoulder, there appeared a defined, smooth, solid swelling at the inner end of the right clavicle. It was diagnosed as a periosteal sarcoma, and was removed by an incision, 6½ inches long, along the anterior border of the bone, meeting a second incision extending along the inner border of the sterno-mastoid, from the level of the cricoid to a point 3 inches below the sterno-clavicular joint. The outer third of the clavicle was retained, the rest being removed, the soft parts being cut mainly with scissors. The pleura and innominate vessels were exposed in dissecting away a tongue of growth which passed down behind the manubrium. The hæmorrhage was not severe, and was readily controlled. The patient made a good recovery, and obtained perfect movement of the arm, without drooping of the shoulder. The paper contains a table of reference to twenty-seven previously recorded examples of this somewhat rare operation.—*Med. Record*, Nov. 19, 1892.

THE USE OF FLAME IN SURGICAL WOUNDS.—M. Félizet brought this subject under the notice of the Société de Chirurgie in October 1892, alluding more especially to the difficulty experienced oftentimes in thoroughly eradicating tuberculous tissues in operations. The method of applying extreme heat which he adopted was the *rapid* passing over the tissues of a blow-pipe flame. Micro-organisms are thus destroyed, and healing hastened; the tissues become dehydrated completely, but never cauterized, unless the action of the flame upon them be prolonged beyond what is proper. During this proceeding the lips of the wound are to be protected by moistened compresses. There is commonly no reaction, no pain nor loss of blood; union may be expected by first intention; if suppuration occur it should be taken as indicating that the "flaming" has been incompletely carried out.—*Revue de Chirurgie*, November 1892.

THE INNERVATION OF THE BLADDER.—Dr von Zeissl (Vienna) gives the results of an experimental research on this subject, in which he applied electric excitation to the nerves regarded as motor nerves of the bladder, and studied the effect by the aid of the "graphic method." The nerves whose functions were so investigated were the hypogastric (from the inferior sympathetic ganglion through the hypogastric plexus), and the sacral nerves ("nerfs erecteurs" of Eckhard) forming part of the sciatic plexus. The intra-vesical pressure was estimated by means of a manometer connected with a canula introduced through a ureter (the other being ligatured). In the urethra a glass tube was placed, the curved extremity of which passed into a U tube; to one limb of the U tube was connected an appliance for registering upon paper the quantity of liquid which flowed into the tube from the bladder. This apparatus was applied in curarized dogs, and the conditions of experiment varied so as fully to determine the nerve connexion of the muscular tissues and of the sphincter of the bladder, and whether the opening of the neck of the bladder was due to muscular action (of the sphincter), or was merely passive and due to contraction of the muscular tissue of the bladder. The following conclusions are formulated:—1. The sacral ("erecteur") nerve is the motor nerve of the muscular tissue, and opens the sphincter. 2. The opening of the sphincter takes place independently of the muscular coat. 3. The hypogastric nerves close the bladder orifice; they have little motor action upon the bladder. 4. The hypogastric nerves arrest the spontaneous movements of the bladder muscles. 5. The two groups of nerves appear to obey the law of "crossed" innervation formulated by M. von Basch,—that is, the motor nerves of a system of muscular fibres likewise innervate antagonistic fibres in the same system. 6. The sacral (erecteur) nerve contains motor fibres for the longitudinal muscular fasciculi in the bladder wall, and inhibitory fibres for the sphincter and for circular bundles. 7. The hypogastric nerves carry motor impulses to the sphincter, and inhibit the muscular coat of the bladder.—*Ann. des Maladies Génito-Urinaires*, Nov. 1892 (Trans.)

RUPTURE OF THE KIDNEY.—M. Bobroff reports three cases, one cured by nephrectomy, and gives the following as his conclusions:—1. That if hæmorrhage threatens to prove fatal in a case of ruptured kidney, then laparotomy should be performed, and the renal vessels ligatured; 2, that this measure does not necessarily lead to gangrene nor to suppuration of the kidney; 3, if after bleeding is stopped there manifest themselves signs of renal or perinephritic suppuration, nephrectomy or nephrotomy should be done, according as the pelvis is or is not intact.—*Centralblatt f. Chir.*, No. 36, 1892.

OPERATIVE TREATMENT OF ŒSOPHAGEAL STRICTURE.—Dr Willy Meyer (New York) records a case, in connexion with which he suggests an improvement in the methods of internal œsophagotomy. The patient was a child, 2½ years of age, in whom Dr Meyer found it necessary to perform external œsophagotomy for the relief of double cicatricial stricture. The incision (about 2 inches long) split the upper stricture. For some time dilatation of the other stricture by bougies was carried out, and later, divulsion by Powell's urethral dilator was practised four times, but still the contraction returned; internal œsophagotomy was therefore decided on, and was performed by means of Otis' urethrotome after antiseptic irrigation; the stricture was divided at two places, all hæmorrhage being readily stopped by ice-cold Thiersch solution. The child died on the ninth day from pyæmia and suppurative meningitis. This result leads the author to suggest that, with a view to obviating the danger of septic absorption, if internal division prove to be necessary after external œsophagotomy, gastrostomy should first be performed, that for some days the œsophagus should be irrigated with solution of permanganate of potash or Thiersch solution, the stomach being similarly treated. At the time of operation the upper portion of the œsophagus should be plugged with iodoform gauze, and irrigation of the lower part carried on while the division is done, and afterwards another plug should be drawn up from the cardia into the œsophagus, thus protecting the wound from regurgitant fluids when the patient is fed through the aperture in the stomach. Dr Meyer recommends the use of the urethrotome, cutting from below upwards. As regards other means of treatment, Dr Meyer admits that in adults, and in emaciated patients requiring immediate nutrition, gastrostomy and the passage of bougies from below upwards may be preferable, but if the stricture tend to contract after repeated divulsion, he considers internal œsophagotomy to be indicated. This operation is one of extreme danger; but if conducted with such precautions against septic poisoning as have been indicated, much of its danger is removed.—*New York Medical Journal*, November 1892.

CAN A SEPTIC BULLET INFECT A GUNSHOT WOUND?—Dr Lagarde (Captain and Assistant-Surgeon, U.S. Army) sets himself to answer this question, and after careful observation and experiment, does so in the affirmative. His conclusions are:—1. The vast majority of cartridges in original packages are sterile, and free from septic germs. 2. The sterile condition of the cartridges is due to the thorough disinfection and absolute cleanliness observed in the process of manufacture. The disinfection with heat, acids, and alkalies, and the rigid rules of cleanliness used in the process of manufacture, are employed to exclude grease and dirt, as the latter impair the keeping qualities of the powder and disturb ballistic values. 3. The majority of gunshot wounds are aseptic, because the vast majority of the projectiles inflicting them are either sterile or free from septic germs. 4. Cartridges out of original packages show micro-organisms upon them, and these are not entirely, if at all, destroyed by the act of firing. 5. Anthrax, when applied to the projectile of a portable weapon, is seldom, if ever, entirely destroyed by the act of firing. 6. When a gunshot wound is inflicted upon a susceptible animal by a projectile infected with anthrax, the animal becomes infected with anthrax, and dies, in the vast majority of instances, from said infection. 7. The heat developed by the act of firing is not sufficient to destroy all the organic matter on a projectile, the cherished notion of three centuries and more to the contrary notwithstanding. 8. The results, as set forth in the foregoing paper, justify the assumption that a septic bullet *can* infect a gunshot wound.—*Ibid.*, October 22, 1892.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—The final examination for the Triple Qualification took place in January 1893, and out of 108 candidates the following 54 passed, and were admitted L.R.C.P. and S.E., and L.F.P. and S.G.:—George Gibson, Northwich; Robert Fairweather, Balfron; James Coubro Potter, London; Augustus Frederic Millard Berkeley, West Indies; Robert M'Coull, Ovington-on-Tyne; Herbert Hewlett Isherwood, Preston; Cecil Bisshopp Hillyar, Southsea; Patrick O'Gorman, County Wexford; Matthew Burrow Ray, Yorkshire; Lucille Doxat Leslie, Margate; Andrew George Rolland, North Shields; Joseph Hickey Ryan, County Limerick; Navrojee Jamshedjee Billimoria, Bombay; Walter Henry Anderson, Burton-on-Trent; Edward Whitley Allsom, Liverpool; George John Amy, Jersey; Alic Phillips, Coventry; William Lyons Lovett, Tullamore; Edward

Augustin Rowan, Kilkenny; Michael Ryan, Cork; Gerald Herbert Johnston, Belper; James Edmund Binmore, Montreal; Alfred Fardon Langley, Victoria, British Columbia; Elias Bell Purdon, Belfast; Robert Morris, County Cork; Henry Campbell, County Antrim; Matthew Patrick Coghlan, County Kilkenny; Henry Alfred Jones, County Cork; Joseph Robins Arthur, Canada; James Andrew Hislop, Birkenhead; Hugh Knox, Hillsborough; George Noble Coombes, Madras; Willie Wardman, Bingley, Yorkshire; Wallace Tynemouth Hedley, Northumberland; Herbert Constantine Swailes, Yorkshire; Allen Mackenzie Cleghorn, London, Canada; Donald Buchanan Ross, Glasgow; Robert Murdoch, Old Cumnock; William Millar, Leith; John Gemmill Thomson, Glasgow; George Montgomery Drury, Cork; Robert Brownlie Martin, Carluke; Lamont Paterson, Harbour Grace, Newfoundland; William Charles Croxford, Brentford; Charles Rodney Huxley, Kent; Thomas Harcourt Lawrie, Edinburgh; Owen Gilmore, County Down; Rolland Atkinson Dove, Carlisle; Robert Dundonald Jameson, Trinidad; John Macgown, Cumbrae; Maurice Joseph Hickie, County Cork; Thomas Lawson, Perthshire; George Ernest Macleod, India; and Allison Albany Davies Parker, Monmouthshire. —Of 43 candidates who entered for the respective divisions, 19 passed.

Royal College of Physicians, Edinburgh.—The following gentlemen passed their final examination for the degree in Medicine in February 1893, and were admitted L.R.C.P. Ed.:—Richard Franklin Forrest, Ontario, Canada; James Forrest, Ontario, Canada.

Royal College of Surgeons, Edinburgh.—The following gentlemen, having passed the requisite Examinations, have been admitted Fellows of the College since last publication:—Henry Buxton, Douglas, Isle of Man; James Cecil Palmer, Edinburgh; Thomas Alexander Papillon, Reading; Cecil Anthony Perrier Osburne, Hythe, Kent; John Edward Allen, Todmorden, Manchester; Andrew Watson Munro, Edinburgh; David William Johnston, Edinburgh; William Guy, Edinburgh; Ernest James Moffat Flynn, London, S.E.; John Dunn, Halifax, Yorkshire; John Milsom Rees, London, W.; James Patrick Andrew Wilson, Hawick; and Peter MacGregor, Huddersfield, Yorkshire.

The following gentlemen, having passed the requisite Examinations, were admitted Licentiates of the College:—John William Steven, Edinburgh; Maxwell Ogilvy Ramsay, Forfarshire; William Andrew Betts, Birkenhead; Roland James Pope, Sydney; and John Allison, Coldstream.

The following gentlemen, having passed the requisite Examinations, received the Diploma in Public Health of the College:—Robert Sydney Marsden, Sheffield; Gilbert Stewart Crawford, Clough; James William Somerville, Galashiels; Charles Edward Glascodine Simons, Merthyr Tydvil; Edward Buxton, Liverpool; James Patrick Andrew Wilson, Edinburgh; Charles James Lownds, India; and Thomas Spowart, Oakley, Fife.

The following gentlemen, having passed the requisite Examinations, received the Diploma in Public Health of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow:—Nathaniel Edward Roberts, Bangor, and David William Johnston, Whitehaven.

British Medical Service.—List of Surgeons on Probation of the Medical Staff of the British Army who were successful at both the London and Netley Examinations, 1st February 1893.

No.	Name.	Combined Marks.	No.	Name.	Combined Marks.
[1] 1.	Mangan, F. M.,	5279	6.	Berryman, H. A.,	4202
2.	Pollock, C. E.,	5265	7.	Buswell, F. R.,	4161
3.	Taylor, W. J.,	4672	8.	Symons, F. A.,	4091
4.	Longhurst, B. W.,	4407	9.	Farmer, J. H.,	4041
5.	Rivers, J. H.,	4406	10.	Samman, C. T.,	4012

[1] Gained the Herbert Prize of £20, with the Martin Memorial Gold Medal, the Parkes Memorial Bronze Medal, the Montefiore second Prize, and a Prize in Pathology presented by Professor A. E. Wright, M.D.

LIST of successful Candidates for Commissions in the Medical Staff of Her Majesty's Army at the recent Examination in London.

Order of Merit.	Names.	Number of Marks.	Order of Merit.	Names.	Number of Marks.
1.	Spencer, C. G.,	2565	8.	Killery, St. J. B.,	2245
2.	Fowler, C. E. P.,	2560	9.	Barter, W. P.,	2230
3.	Goodwin, J. H. J. C.,	2550	10.	Lattey, A.,	2215
4.	Porter, H. E. B.,	2400	11.	French, H. C.,	2180
5.	Collins, D. J.,	2390	12.	M'Munn, J. R.,	2180
6.	Smith, W. W.,	2385	13.	Anderson, J. B.,	2075
7.	Keble, A. E. C.,	2290	14.	Williams, E. M.,	1990

PRESENTATION OF PORTRAITS OF PROF. GAIRDNER, GLASGOW.

ON January 28, in the Bute Hall of the University, a portrait of Prof. Gairdner, subscribed for by his old pupils, and painted by Sir George Reid, *P.*R.S.A., was presented to the University of Glasgow, and a replica was at the same time given to the family of Dr Gairdner. Principal Caird presided, and there was a large attendance of ladies and gentlemen.

In reply, *Dr Gairdner* said—I trust that no one of the friends now present will expect me to say that I am quite easy in my mind on this happy occasion. I feel, I assure you, the extreme difficulty of speaking adequately—or, indeed, of speaking in any sense so as to convey what I mean—in answer to remarks so highly charged with eulogy. What I have to say must to some extent be in an autobiographical, and therefore a somewhat egotistic form, but I may disarm the egotism in some degree by a preliminary confession, which I make in all frankness and simplicity, for when I look back over my past career the thing that at once strikes my own mind is not what I have done, but what I have failed to do. It always appears to me that, with the grand and glorious opportunity that was presented to me as a teacher in two of the largest schools in the kingdom, I ought to have done a great deal more both for the art and science of Medicine and for the communication of it to others. At the same time I may, no doubt, claim this, that with whatever success or the contrary I may have fulfilled the function, it has been a very straight line of life to me. It has been from the first, and has been maintained to the close, always the purpose of my life, quite definitely set forth to my own mind, and adhered to with perfect and absolute unswerving constancy from first to last. When a young man, or rather a boy, I thought that Medicine was not the line of life I should like to follow. What was to be the line I am not quite sure that I knew myself, but I had a feeling that it would not be Medicine. I do not know even now what has ruled it thus, but now that I come to look back upon the choice, I think it may fairly be called a providential ruling. I hardly think that in any other line of life I could have succeeded so well. One of the circumstances undoubtedly which was a largely-determining cause of my taking to Medicine was the fact that it was the profession of my father, a man well-remembered even now in Edinburgh, as one of the most devoted, single-minded, and absolutely just and righteous of all her many men of professional distinction. Many of the recollections of my student days crop up in my mind to-day. It is interesting to myself, at all events, to remember that some of those who sat on the benches with me as a student have risen to positions of distinction, and not a few of them have also filled positions as teachers. One with whom I was very closely associated throughout—we both graduated on the same day, and both gained some prizes—was Prof. Struthers of Aberdeen, who is now living in retirement from his professorship in Edinburgh. I had hardly graduated in August 1845, before an opportunity was presented to me of going to Rome with the Lord and Lady Beverley of that day, who afterwards became Duke and Duchess of Northumberland. I resided in Rome for five or six months, and can hardly express the charm of that winter—the opening out of the mind, the wonderful flow of ideas and bright thoughts that spring from a residence in the Empire City. It has been one of the strongest educational influences on my mind that I can point to in the course of my career. But not only did it have this general educational effect, but it was the means of bringing me in contact with many friends, of whom, I fear, very few are now left. On returning from Italy I at once tackled to hospital work, and I am not sure if I am not the only man in Scotland who can say, at this moment, that from the year 1846, when I entered Edinburgh Royal Infirmary in the capacity of House-surgeon, and served for two years, until the present day—that is to say, 47 years—there has never been a break of quite three months in my service of hospital duty. In 1848, when Dr Bennett obtained the Chair of Physiology in Edinburgh, I was at a very early age appointed Pathologist of the Edinburgh Royal Infirmary, and it was that appointment, as Dr Coats has said, which laid the foundation of whatever medical knowledge I now have that is available for teaching. The very first, as this portrait is the last, testimonial which I have received as to my work was the three volumes of *Bright's Hospital Reports*, which I greatly value not only in themselves—every one knows the value of that book—but because they bear on the fly-leaf the inscription, in the handwriting of Dr Warburton Begbie—"Presented to Dr William T. Gairdner by the gentlemen attending his first course of lectures on Pathological Anatomy, session 1848–49." Among the subordinates with whom I had to do when I was Pathologist in Edinburgh were several men of distinction, some of them no longer living. I had the great satisfaction and pleasure of co-operating with Dr Kirk, who was, and is known as the friend of Livingstone, and long Consul at Zanzibar, where he has done an immense deal to preserve right relations between this country and that portion of Africa under British influence. Dr Howden, Montrose, and Sir Alexander Christison were among those associated with me at that time. In 1853 I began to lecture on Medicine. For the encouragement of young professors I may mention that my first class only numbered 12 students. Next year the number had risen to 52, while in the third year they were 124, which at that time was regarded as the largest extra-academical class of Medicine taught in Edinburgh for many years. At that period of my career I was brought into very close contact with a dear friend, whose handwriting I now see in the volumes just mentioned, Dr Warburton Begbie. It is one of the delights of my life to think that Begbie grew up, as it were, beside me; that he was my pupil in these pathological days, being two years younger; that he was my competitor, but close associate also, in hospital work; that he was my rival in teaching; and that during the thirteen or fourteen years that followed, our relations were never for a single moment strained, but always those of perfect friendship. In 1862 I was promoted to the Chair in Glasgow, and it is not necessary that I should say any more about that, because my career in this University is fully before you. I should like to say that I am, perhaps, a typical example in some respects of the difference between a Scotch professor and a London teacher of Medicine. The Scotch professor is a professor to the end of the chapter; while the London man is, as a rule, only a teacher until he has got floated into such a lot of practice that he does not care to teach any more. It may serve to illustrate this point if I mention that at the open grave of Dr Begbie I had a conversation with Mr Raleigh, then manager of the Scottish Widows' Fund, who said, "Suppose I were in a position to offer you the office that Dr Begbie held as physician to the Widows' Fund, would you accept it?" The proposal thus suddenly and startlingly made was a tempting and very striking one. Of course it was hypothetical altogether. But the answer I made at once was, "Mr Raleigh, it is a fine and a tempting idea to succeed Dr Warburton Begbie, and to try also to succeed him in the most magnificent consulting practice that has ever been made in Edinburgh; but though you may possibly be able to offer me the Scottish Widows' Fund, you cannot offer me a professorship, and you cannot offer me a hospital; and if I were to wake up some winter morning and find I had not my wards to visit and my class to teach, I should not recognise myself as being the same man." There are a good many people who, meeting me in the club about lunch time, little know that about the hardest part of my work is done before twelve o'clock. They see me reading the newspapers, and think, perhaps, that I lead, upon the whole, a very easy life. They do not quite realize that it has been a case of strong tension of mind from nine o'clock till twelve in the presence of patients in the hospital and of students in the class; they do not know anything at all, moreover, of the work that has to be done from day to day to keep the instruction up to the level that is required, for I am one of those who do not believe in repeating lectures. I never did believe in putting lectures on paper, so that they can be read session after session. All the lectures delivered to my class are to me a matter of great thought, carefully and freshly thought over the night before. These few reflections, perhaps, may be enough of a biographical kind. I hope I am not giving too solemn a cast to the present proceedings if I recall to mind that, large as the number may be of those who have been joined with you in this complimentary gift, it might have been—would have been—much larger had the many old and dear friends whom I can look back to as the pupils of my earlier years been with us now to cheer and to help us to-day. But this leads me to indulge another thought which lies very deep within me, and is entirely in accord with other and more domestic feelings, too sacred to be dwelt upon. Those dear departed ones—almost contemporaries, but still who did not disdain to become, in a sense, pupils of mine in those early years—are they not, indeed, with us to-day, with us in spirit, with us in intention, with us in heartfelt sympathy with what you are doing now? Warburton Begbie, Sanders, Murchison—I will name only these three, while my memory could easily recall a score at least; and I name them because they were all men of the highest order, and bound to me through life by ties of the closest friendship. Can we suppose that, while my own heart yearns towards them on this occasion, they are altogether unconscious or indifferent as to what is happening to me? I prefer to believe, gentlemen, that these men, and many others like them, are really with us to-day. A great philosopher of the present age is held by some to have explained away all religions by resolving them in their beginnings into a belief in ghosts. I am not sufficiently well read—not enough of a philosopher—to know whether his conclusion is justified by his facts; but if it were so, what then? I will confess to you, gentlemen, and I do so in all seriousness and good faith, that ghosts—the spirits of those I have loved and honoured—are very real to me at a time like this. Ghosts have filled a large part in my life. Ghosts have lived, and still live, in my heart of hearts. Ghosts have had a great share in my best resolves, and have inspired much of any little I may have done for the good of living men. The city of Edinburgh, where I was born and brought up, is full of them in every street and at every turn. The old Royal Infirmary, where I learned Medicine under Alison, Christison, and Graham, and taught it alongside of Begbie and Keiller and William Robertson, was haunted by the ghosts of many dear old friends as long as it lasted; and the ghosts have survived the Infirmary. But these are not the ghosts that love the darkness of the night, and strike terror into weak minds. They do not "materialize" in white gauze or stage-property dresses. They are far too real for that; and they enter far more easily into our inmost being, because they are unseen and unfelt. I do not envy the man to whom the spiritual world is so shut that he must needs have a materialized ghost to make it palpable. I remember, on one occasion, not so many years ago, that an address I gave somewhere or other called forth a response in a private letter from one who wished to convert me to a philosophy, which, to use his own words, had "abolished ghosticism,"—that is, had completely done away with the whole spiritual universe, and God as the beginning and the end of it. I was not competent to argue with this gentleman, for he was far more deeply read in philosophy than I was; but I met his main proposition by saying that the one thing I could not escape from—that I felt absolutely sure of—was that I, at least, had a quite real ghost inside; and that as I did not make the universe, or even the small fraction of it known to me, it was reasonable to suppose that there were other ghosts about, not to speak of the Holy Ghost, the spirit of the living God, "in whom we also live and move, and have our being." I did not succeed in convincing this philosopher, nor he me; on the contrary, it seemed to me that he only got rid of "ghosticism" by resolving all of what we call realities into phantasms of his own personality. I mention this only to show you that, in my most settled and calm thinking, I regard spiritual things as the greatest of all realities. And this leads me back again to the business of to-day. In your very great loving kindness, gentlemen, and in your too generous estimate of what I have done in this University, you wish to aid in handing down to posterity the memory, not, indeed, of my spiritual work, but of the frail and fleeting tabernacle in which that work was accomplished here. I am not worthy of so much devotion, but I thank you all the same. It will be an inspiring thought for me, in what remains to me of life, that after I am gone my ghost will still inhabit these walls—not striking terror, like the stage-ghost in Hamlet, but rather, I would fain hope, shedding some genial influences for good upon future generations of students. And to my dear ones, present and to come, to my family in the stricter sense of the word, it will be an heirloom, and, I hope, a blessing for generations yet unborn, to look upon the features which you see here so faithfully depicted by my friend, Sir George Reid.—*Glasgow Herald*, Jan. 30, 1893.

Dr R. Weil, in Berlin, has been experimenting upon the administration of an extract of young bilberry leaves. He has had pills made (Pilulæ Myrtilli Jasper), each of which contains 0·12 gramme of the dried leaves, and he administers the pills as follows:—For three days one pill three times a day; for three days two pills thrice daily; for three days three pills thrice daily; for three days four pills thrice daily; and thereafter, as a rule, five pills three times a day. The following results were obtained in two cases:—Patient R. At the commencement of the treatment there was 3·12 per cent. of sugar in the urine; after taking the pills for two weeks, 1·66 per cent.; after four weeks, 1·25 per cent.; after eight weeks, 0·71 per cent; after twelve weeks, 0·14 per cent. Patient J. At the commencement of treatment, 4·68 per cent.; after two weeks' treatment, 3·51 per cent.; after four weeks, 1·25 per cent.; after eight weeks, 0·98 per cent.; and after twelve weeks the sugar disappeared. The pills are prepared by Max Jasper, Bermau i. M.—*Blätter für Klinische Hydrotherapie*, Nov. 1892.

DR ALICE MACLEAN ROSS calls attention to a certain relation existing between complexion and laceration of the perineum and cracked nipples. She says,—"In red-haired women and those brunettes who have red lips, red cheeks, and are inclined to freckle rather than to tan, lacerated perineum and cracked nipples occur most frequently. And those sallow-skinned blondes who tan rather than freckle, and who have a tendency to a deposit of pigment in the areola of the nipple, about the neck and armpits, are least liable to suffer from these accidents. The first class seem to have friable tissues and thin skin, and the second tough muscles and thick skin. Other women are liable to suffer or able to resist as they lean towards one type or the other. This relation is to me marked, and is of value in prophylaxis."—*Medical and Surgical Reporter*, October 1892.

A CASE is on record of a Russian peasant whose wife presented him with quadruplets four times, triplets three times, and twins sixteen times, making 57 children in all.—*The Scalpel*, October 1892.

TO those who are interested in suicides, we recommend the perusal of a very interesting paper on the subject by Dr Collineau in the *Journal de Médecine de Paris*, August 21, 1892. He calls attention to the existence of a suicide club at Craiova in Roumania. The club numbered 19 members, and already 5 had committed suicide. He gives some valuable thoughts as to the peculiar psychological causes which induce men to join such clubs, and much interesting information with reference to the committal of suicide, either in isolated cases or among those banded together for the purpose, in different countries and different ages.

IT is not often that we come across a case of murder and sexual perversion in English medical literature, and indeed it is somewhat surprising that sexual perversion is either so uncommon or that it apparently escapes professional notice. The latter is probably the more likely. In the *Medical Record* for August 1892, the following appears. We quote the leaderette in full; it may serve as a warning, although we do not quite agree with all its sentiments:—"The case of Alice Mitchell, which has just been tried at Memphis, Tenn., is a painful illustration of sexual depravity and the result of bad educational influences. The young woman was afflicted with an affection which Science with a big S. calls *psychopathia sexualis*, and pronounces the subject the victim of perverted sexual instincts. The pervert in this case attached herself to a Sapphic friend, whom she killed one day in a fit of jealous fury. On trial a defence of insanity was made. The medical experts were, we believe unanimous in pronouncing the case one of primary degenerative insanity; and the jury brought in a verdict of insanity. We do not wish to contradict the combined testimony of so many alienists with reputations evidently very high in Memphis. Technically, perhaps, the girl was best considered insane, but we cannot avoid believing that if this alleged lunatic had been treated for worms, leucorrhœa, constipation, or some other of the frequent mechanical excitants of unhealthy sexual desire, or if she had been taken in hand early by those in authority, and received a course of bread and water, and perhaps some strong corporeal applications, she would not have become a Lesbian lover or a murderess. There is no function easier to control or to corrupt than the sexual. While some sexual perverts are born so, the majority are not, but form their habits through gradual vicious indulgence. Nearly all are amenable to moral influences,—that is to say, to rewards and punishments. The sexual pervert may be technically insane, but he or she is legally responsible, and should be so held. Alice Mitchell has escaped the penalty of her depravity and crime. The story may not be without profit to parents, however. The passionate friendships of young girls may be innocent and charming, but they need the wise scrutiny of those who have charge of them. Perverted sexuality speedily brings a desire for more and more filthy indulgence. Of nothing can it be more truly said, *Facilis decensus Averni.*"

"DUNNING" FULLER'S EARTH.—Sir Alfred Garrod, walking one day with Lord Rollo over his estate of Dunning, made the remark that it was probable that a field they crossed might contain a very precious fuller's earth. The suggestion thus thrown out has proved correct. Messrs Baildon & Son and Messrs Duncan & Flockhart have both furnished us with specimens of a particularly fine variety from this source, which promises to be of special value as a dusting powder. This is found on analysis to be composed of silica and alumina, with a mere trace of oxide of iron. It is an extremely soft, impalpable powder, of a delicate flesh tint, quite unirritating when applied to the skin; and when a small percentage of some antiseptic, such as three per cent. or less of salicylic acid, or from five to ten of boric acid, is incorporated with it, an almost ideal "nursery" dusting powder is obtained. It is highly absorbent, and this is an additional advantage in the case of infants, while it adheres readily to the surface, so that the quantity required is small. Its colour adapts it for use as a cosmetic, while its freedom from any harmful ingredient renders its employment as such less objectionable than in the case of some. Combined with ten per cent. of precipitated sulphur it is suitable for acne, and applied pure we have found it relieve the itching occasionally troublesome in the early eruptive stage of measles. Its slightly astringent properties should prove serviceable in cases of hyperidrosis. We can strongly advise our readers to try it.

THE REFRIGERATION OF CORPSES.—In a letter to the *Western Morning News*, Dr J. Lawrence Hamilton of Brighton says:—" In 1880, Dr Brouardel induced the authorities of the Morgue (or the Paris mortuary connected with the medico-legal department of the local coroner's courts) to establish refrigerator apparatus in order to temporarily preserve corpses discovered in the Seine or elsewhere for subsequent identification. By refrigeration the corpses are rendered imperishable for any desired time, and should putrefaction have commenced, it is arrested. The corpses are first cooled to a temperature of 15 degrees C. below the freezing-point of water, a temperature which in ten hours will penetrate through even the most bulky human body. These frozen corpses are as hard to the touch as a piece of wood. When frozen, the corpses are removed to the public inspection room, and kept at about a temperature of 4 degrees C. below the freezing-point of water, in suitable compartments, furnished with a double glass lid at one extremity, in order that the features may be seen. These cases are all the more important, as it is found that currents of air cause a brown, parchment-like appearance of the face, and therefore render identification of the corpse difficult or impossible. Should a post-mortem examination be required, the body is thawed to a temperature between 15 degrees C. and 20 degrees C. The autopsy finished, the corpse, if necessary, can be again refrigerated. The refrigerator apparatus selected by the municipal authorities of Paris was supplied by Messrs Rouart, who employ their own modification of the condensed ammonia and chloride of calcium process, worked by a one horse-power motor."

THE DREAM OF THE OVARY.—When the window-pane is broken, how demure and quiet all the boys are. No one has done it, and each looks in such innocent wonder at his neighbour that it seems almost cruel to ask questions. The only unpleasant aspect of the affair is the fact of the damage done. Everything else is so refreshingly guiltless that we are almost thankful that the alleged accident has happened, in order that the innateness of the good should become so strongly accentuated. So it is with the discussion concerning reckless surgery recently held in one of the leading dailies. The charge has been made, with no reason, of course, that surgery is becoming too invasive. If anyone believes that such is possible he has merely to read the conservative interviews and be at once disabused. With the incoming year each and all of us will hail this radical change in opinion with becoming joy. What glad news this will be for the little ovary, which can now uninterruptedly carry on its particular home industry instead of becoming domesticated into the pickling-jar of the progressive gynæcological pathologist. Its commoner and multiplied diseases will vanish, the innocent cysts will no longer be apologetically demonstrated, and operative statistics will dwindle. The peritoneum will no longer be a thoroughfare, and the surprised gut will less seldom twist its bashful coil from the light of day, or join in the unnatural alliances of advanced intestinal anastomosis. The vermiform will gladly retire to private life; the wandering kidney will be more likely to stay at home; and even the gallstones will elbow their faceted sizes through the dark tunnel of the common duct in the good old-fashioned style, only to be lost in the harmless embarrassment of a delayed stool. Let us hope, then, that the surgical millenium is coming, that the knife shall be turned into a spoon, that the pill shall once more have its right of way, that the ovary shall hereafter peacefully wrap the drapery of the broad ligament about her and lie down to pleasant dreams of families yet to be.—*New York Medical Record.*

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Part First.

ORIGINAL COMMUNICATIONS.

I.—INDUCTION OF LABOUR BY MEANS OF INTRA-UTERINE INJECTIONS OF GLYCERINE IN A CASE OF ECLAMPSIA GRAVIDARUM.

By **Alexander Russell Simpson**, M.D., President of the Royal College of Physicians, Professor of Midwifery in the University of Edinburgh, and President of the Edinburgh Obstetrical Society.

(Read before the Obstetrical Society of Edinburgh, 11th January 1893.)

On the 12th of November last I was called by Dr Sloan to see a case of puerperal eclampsia which presented various features of special interest. The patient was brought into the Maternity, and I record the history as it has been drawn up by one of the house-surgeons, Dr E. C. Easterbrook, who, with the aid of his colleague Dr W. Petrie Simpson, carefully watched the patient and made notes of her progress.

Mrs H, i-para, aged 26 years, a married woman living in Albert Street, Leith Walk, and attended by Dr A. T. Sloan, was admitted into the Edinburgh Royal Maternity Hospital on Saturday, the 12th November 1892, at 10 A.M., being in a condition of incipient labour, complicated with coma and convulsions.

History:—1. *Social.*—Patient is a married woman, with a comfortable and apparently healthy home and surroundings.

2. *Family.*—Her parents were healthy—father dying at 69, and mother being still alive. Some of her brothers and sisters died of phthisis. One paternal aunt was insane, and another paternal aunt was hysterical; both are now dead. Husband says he is a healthy man.

3. *Personal.*—Patient is a moderate eater, practically a teetotaller; has always been of a rather nervous and excitable nature, and of late has been somewhat put about by the sayings of her neighbours as to what she would have to go through in her approaching confinement. She had measles and scarlatina in childhood; occasionally she complained of a swollen and painful left leg, and of a sore throat at winter times. She occasionally also had eruptions of "brown scaly spots," both before and after her marriage (in August 1891). Patient has always had a tendency to constipation. Men-

struation began at 15 years, being of 28-day type, lasting five days, and being of moderate quantity.

Pregnancy.—Date of probable conception, in first week of April 1892. Date of last menstruation, from 4th to 9th April 1892. Date of first stirrage, in June 1892.

Pregnancy, then, commenced in April 1892; during it we may note the following:—Morning sickness, which occasionally amounted to a vomiting of breakfast, ceased at sixth week. Constipation was marked throughout pregnancy, patient sometimes going a week without motion. There were the usual errors of micturition, but urine was always in usual quantity. Stirrage (which is affirmed to have been perceptible to mother by third month) was always very distinct, often preventing her from sleeping at night, and even from sitting about quietly during the day, and sometimes causing her to complain of it to her husband. At the end of October the fœtal movements gradually diminished, and in about a week (*i.e.*, a week before admission on 12th November 1892) had ceased altogether; and during the same time there occurred a "sinking down of the womb" and a discharge from the genital passages. After the end of October the following complications also arose:—Great thirst, continuous headache, which never really left the patient, and was occasionally severe.

After the thirst and headache had been present for a week, came a sudden but short attack of vomiting (at 9 A.M., on 8th November 1892); about two days later, while patient was in bed (at 1 A.M., on 10th November 1892) occurred a severe attack of shivering. Nothing unusual, according to husband, was noticed in connexion with the sight, hearing, memory, or urine, although slight twitchings of face sometimes occurred during the previous day or so. Next day (11th November 1892) patient had her first free motion for a week; but the headache had meanwhile become very intense, being now distinctly frontal and right-lateral, and while the patient and her husband were sitting at tea (at 5 P.M. on 11th November 1892) ended in her first fit, during which patient showed "whites" of eyes, became convulsed in face and limbs, and seemed semi-conscious. Dr Sloan was sent for, and arrived to find patient rational and conscious, with temperature and pulse normal and urine non-albuminous. He ordered attention to bowels, and rest, and prescribed potassium bromide. During the night and early morning the patient had ten more "fits" (second at 7·10 P.M., third at 8 P.M., fourth at 8·50 P.M., fifth at 9·30 P.M., sixth at 10 P.M., seventh at 11 P.M., eighth at midnight, ninth at 1 A.M., tenth at 3 A.M., eleventh at 4 A.M.), and became gradually comatose, with equally-contracted pupils and somewhat spasmodic rigidity of right lower limb. Sedative and purgative enemata and hypodermic morphine injections were given during this time, their administration being noticed to be usually followed shortly by another fit. From the time of the eleventh fit at 4 A.M. on 12th November 1892 the patient was kept under the partial influence of chloroform, which seemed to prevent the recurrence of fits.

Dr Sloan now recommended a consultation with Prof. Simpson, who arrived about 8 A.M. on 12th November 1892, and advised the induction of premature labour, and so at 8·15 A.M. he injected up along the undilated os and canal of cervix into lower uterine segment about 3 oz. of glycerine. Dr Simpson also recommended that patient should come to Maternity Hospital, where she was admitted at 10 A.M.

Physical Examination on Admission.—Patient was admitted as a case of eclampsia, and so was douched vaginally previous to examination with 1–30 boracic lotion, instead of the usual 1–2000 corrosive lotion. Patient is medium sized, well formed, and well nourished, in a helpless prostrate attitude, and unconscious. Twitchings frequently pass over the face and limbs. Pupils are equally contracted, and do not react to light or accommodation. Temperature 97°·8 F.; pulse 60, and breathing 12 per minute.

Urine (℥xvj. of which were drawn off from the bladder by catheter just after admission, and examined at once).—Sp. gr. 1020, acid reaction; urea, 10 gr. per oz.; urates very abundant, depositing freely when urine cooled; sugar reactions slightly present (probably due to glycerine excreted). No albumen, blood, or tube-casts.

Examination of thorax showed heart and lungs to be apparently normal. Mammæ primiparous, but do not show very markedly the changes in pregnancy, there being but slight enlargement, no striæ, and no milk expressible.

Examination of abdomen and pelvis gave evidence of a uterine tumour, not very prominent, ovoid, reaching to midway between the umbilicus and episternum, fairly central, cystic, now and again contracting, and containing a fœtus with its back to left and front, and its head apparently within pelvis. A bruit synchronous with maternal pulse is heard along right border of uterus, but no heart-sounds are audible.

Presentation, vertex. Position, L.O.A. Soft passages favourable, os uteri being now dilated to size of a shilling piece. Pelvic measurements normal.

Labour.—Labour had evidently been successfully induced by the intra-uterine injection of glycerine at 8.15 A.M., and at time of admission, 10 A.M. (*i.e.*, 1¾ hours after the injection), the os had reached the size of a shilling, as just stated. At 10.20 A.M. came the twelfth fit, and at 2.30 P.M. occurred the thirteenth fit, which was specially severe, similar to the others. During it the eyes were strongly deviated to the left, lips and nose were much contracted and performed various movements; lower jaw was clenched, and the upper and lower limbs passed into a state of brief tonic spasm, followed by a state of short clonic spasms which made the bed shake. (Temperature was 98° F., pulse 110.)

At 11 A.M. (when os uteri was still the size of a shilling piece) the second application of glycerine was made, in the shape of two glycerine plugs (*i.e.*, cotton wool soaked in glycerine), one of which was carried up cervical canal, the other being left in fornix vaginæ. At 1.40 P.M. the plug was removed from fornix, the os being still size of a shilling. At 4.20 P.M. the os was size of a florin, and ʒvj. of glycerine were injected into uterus, this being the third application of glycerine. At 6.30 the os was almost wholly dilated, the first stage ending at 6.45 P.M., and therefore having lasted 10½ hours. During this stage, in addition to the two fits (at 10.20 A.M. and 2.30 P.M.), the patient vomited twic (at 11.30 A.M. and 2.25 P.M.), and had one very small motion (a 2.40 P.M.), although there had been administered olei croton. ♏iij to back of tongue (at 10.40 A.M.), a glycerine suppository (at 1.3 P.M.), and an ordinary soap and oil enema (at 2.10 P.M.) ℥v. urin were drawn off from the bladder at 4.40 P.M.

The second stage lasted less than half an hour, the child bein expelled at 7.12 P.M., with the cord twisted twice around its neck Child had been dead several days. During the second stag patient was kept somewhat more deeply under chloroform tha during the first stage, in order to prevent supervention of mor fits. No fits occurred, and expulsion was effected almost entirel by the uterus.

The third stage came to an end at 7.30 P.M. on 12th Novembe 1892, lasting eighteen minutes.

Puerperium.—The puerperium lasted only 34½ hours, the patien dying at 6 A.M. on Monday morning, the 14th November 189 Pulse and temperature were taken every hour, and their vari tions are shown in a Chart. (Chart shown.)

Temperature was very irregular, though varying within sm limits (97°·2 to 100°·2 F.).

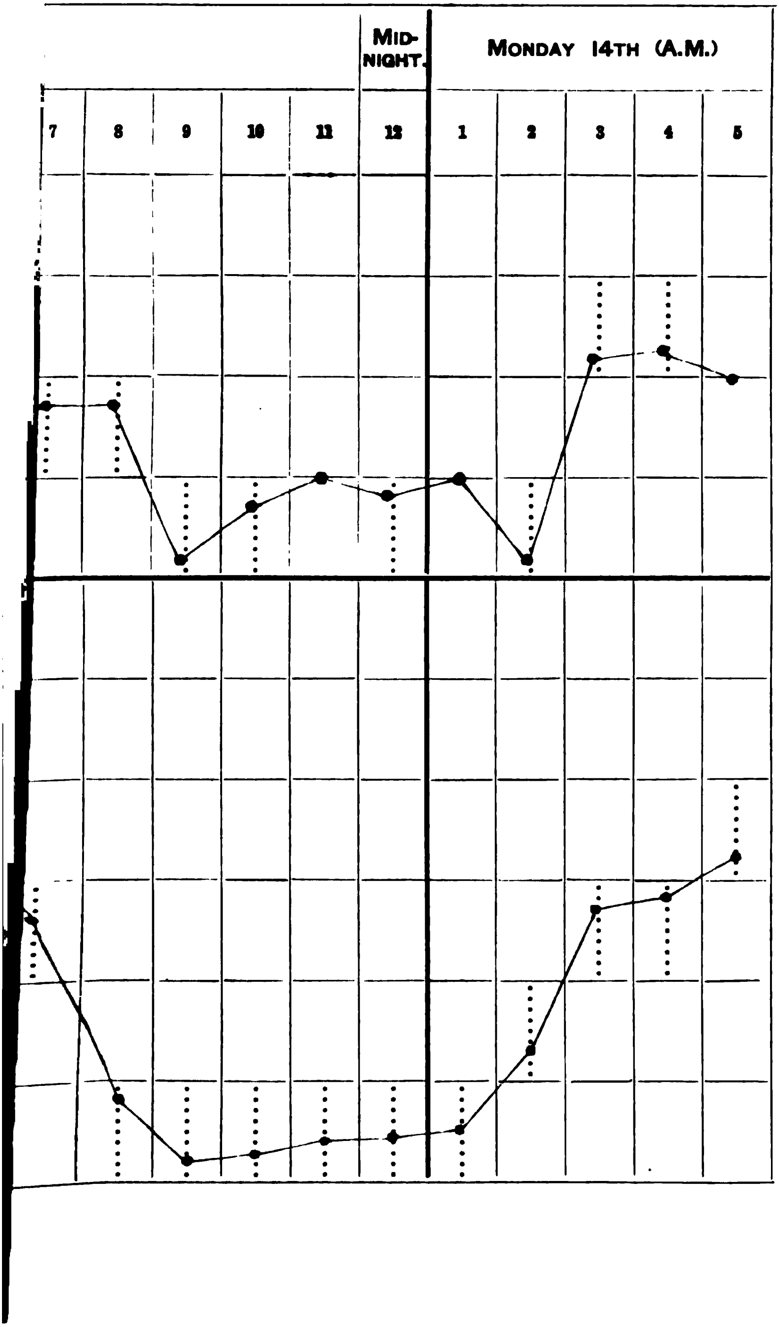
Pulse was also very irregular, both in frequency (varying fro 62 to 116) and in rhythm; ultimately, also, it became very soft.

Breathing was fairly normal during first twenty-four hours puerperium, but on Sunday evening it became very irregular frequency (sometimes slow, oftener rapid), in rhythm, and in dep and before midnight resembled the Cheyne-Stokes ascending descending type.

Motions.—Patient had her first and only free motion at noon Sunday, but only after having previously swallowed ℥iss. Henry's solution and a little milk containing ♏iij. of croton oi

Urine.—On Saturday, the day of labour, 30½ oz. were ta from bladder. On Sunday 25½ oz. were taken from bladder, an addition some was passed in bed towards midnight. Albu appeared only in urine at very end, and in small quantity.

General Condition (Fits, etc.) and Termination.—On the even after delivery patient had her fourteenth (at 10.50 P.M.) and fiftee (at 11.15 P.M.) fits. Early next morning she seemed to impro


MID-
NIGHT.
MONDAY 14TH (A.M.)
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and, though still unconscious, was able for first time to swallow. Her last fit (sixteenth) occurred at 10.10 A.M. (Sunday). Towards the afternoon she became more conscious than she had yet been, and seemed to recognise her husband. On Sunday evening, however, she changed for the worse, becoming quite unconscious, restless, with irregular temperature, pulse, and breathing, clonic convulsions of face and upper limbs, and a more tonic rigidity of right lower limb. Right pupil became dilated to ⅜ths of an inch at 8.30 P.M. Left pupil became like its fellow at 4 A.M. on Monday morning, and patient died at 6 A.M.

Further Reports on—(1), Urine; (2), Mother (post-mortem examination); (3), Infant (post-mortem examination); (4), Secundines.

(1.) *Urine.*—Specimens of patient's vomit, fæces, and urine (viz., a specimen of each of the three mornings' urine) were sent to Laboratory of Royal College of Physicians. The urine was considered the most important to examine, and the report upon it only confirmed the analysis made in hospital. Albumen occurred only in specimen of urine taken after death, and, according to Dr Noël Paton and Dr Boyd, this urine contained ·23 per cent. total proteids, consisting mainly of serum albumin, but slightly of serum globulin.

(2.) *Mother.*—Dr Robert Muir performed a sectio about nine hours after death.

Extract from Dr Muir's Report.

Naked-eye and microscopic appearances:—Heart normal; left ventricle contracted; fluid blood in cavities (no clots). Spleen normal. Lungs both somewhat congested; apices (especially left) are seat of groups of old tubercles, some fibrous, some calcareous. Liver pale yellow in colour, lobules being yellow at periphery, and sometimes dark at centre; granular gritty areas here and there; microscope revealed condition of slight cloudy swelling and more marked fatty infiltration. Left ovary showed corpus luteum of pregnancy; left ovarian vein was greatly dilated, and contained a recent clot. Kidneys normal size; capsule non-adherent; surface smooth and pale, with lines of congestion; cortex decreased; parenchyma increased; interlobular straight vessels congested. *Micro.*—Cloudy swelling, passing on to acute nephritis; no casts in collecting tubules, or any evidence of old kidney disease; epithelium of convoluted tubules swollen and granular, and in places disintegrating capillaries between tubules compressed by them; larger vessels and capillaries in other parts markedly congested. Brain: Convolutions somewhat flattened; extensive hæmorrhage had torn up the anterior portions of both frontal lobes, especially the right one, which was almost wholly destroyed; there was a diffuse subarachnoid hæmorrhage over parietal lobes; the posterior end of mid-frontal convolution on left side contained an older more limited hæmorrhage; there was a clot in the fourth ventricle. *Micro.*—Arteries of brain normal (no syphilis); superficial veins of brain in pia-arachnoid were greatly distended with dark blood, which had formed fairly firm clots in many of them. "From condition of vessels and distribution of the hæmorrhage, I have little doubt that the bleeding had taken place from the superficial veins on both sides. I think it quite possible that this may have occurred during the convulsions."

(3.) *Infant.*—(Male, 18½ inches, 5 lbs., about 8 months old). Had been dead several days before birth, the cuticle being peeled from penis and scrotum, and a reddish-blue discoloration, occupying abdomen, scalp, face, and neck, on which were visible outlines of two coils of cord. An examination of the organs showed no evidence of syphilis or of any other cause of death.

(4.) *Secundines.*—Liquor amnii apparently normal. Membranes apparently normal. Cord, 24 in.; torsion moderate; two coils round neck; discoloured. Placenta ovoid in form, small, 13 oz.; presented a large, round, opaque white mass, hard to touch, and separated from general placental mass by thin tissue. The placenta was sent to Laboratory of Royal College of Physicians, Edinburgh, to be examined by Dr J. C. Webster, who reports as follows:—

"The placenta showed white nodules in a few places, occupying the whole thickness of the organ. Otherwise the placenta is healthy. On microscopic section these nodules are found to consist of villi and villous stems massed together, and surrounded with fibrin. The epithelium covering the villi is in places destroyed. The mucoid tissue in the stems and villi is entirely changed to dense fibrous tissue. The vessels show proliferation of the endothelium, in some cases so marked that the lumen is entirely closed."

The case may suggest various questions for discussion. As regards the cause of eclampsia, for example, which the pathology of the day leads us to look for in a toxæmia due to impairment of the kidneys, the absence of albuminuria until the last hours of the patient's life, and the fact that the nephritis observed at the post-mortem was evidently of quite recent origin, seem to indicate that in this instance the eclamptic seizures had preceded, and not been due to the renal changes. That the fœtus had been dead some time before the fits occurred seems to be a further reason for seeking the cause of the seizures in some other direction. If still we are to think of blood-poisoning, we must keep in view the bad history which is given of the alvine evacuations. Habitually constipated, the patient had gone a whole week without motion of the bowels just before the fits came on, so that, instead of a uræmic origin, they may here have been due to some kind of stercoræmia. Further, though there had been no perceptible icterus, the post-mortem examination showed that the liver was diseased, so that the mischief may have been cholæmic; and in this connexion I note that in Duhrssen's[1] record of 200 cases of puerperal eclampsia, 16 of the 37 fatal cases had icterus, or showed traces of hepatic disease at the autopsy.

Again, the death was due to the extensive cerebral apoplexy. The proportion of cases of eclampsia in which this complication arises is variously given by different authorities. Thus, while Löhlein[2] speaks of only two deaths from cerebral apoplexy in 352 cases, Goldberg[3] has four brain extravasations in his 81 cases; and Olshausen[4] finds in his 200 cases five where the cerebral apoplexies had proved fatal, two others with considerable hæmatomata of the pia mater, and five more in which there was decided hyperæmia of the brain, and usually also of its membranes.

But the point that is of most practical interest in the history I have recorded is the method adopted to promote uterine activity, and to those who have not read Pelzer's paper[5] on "Erwegen der Wehenthätigkeit durch intrauterine Injection von Glycerin," I suppose it will have the interest of novelty. In this paper, after indicating the dangers and uncertainties attendant on the methods so commonly employed for inducing labour of injecting warm water, or of introducing an elastic bougie between the membranes and the walls of the uterus, he gives the history of four cases in which labour was induced by injecting glycerine into the lower uterine segment. In the first case the membranes were accidentally ruptured by the point of the syringe; but in the other three cases the injection was successfully carried out. Two of these were cases of induction of premature labour for contracted pelvis; the other was a case of placenta prævia.

To the inquiry as to how the glycerine injection sets up uterine action, Pelzer offers three suggestions,—

1. It produces a mechanical separation of the membranes from the interior of the uterus. This is an action which it has, of course, in common with other methods employed for the purpose, such as the separation of the membranes with a finger, sound, or bougie, or by the injection of warm water, pure or medicated, through the cervical canal.

2. He suggests that it may have the effect of a direct irritant on the interior of the uterus, setting up in this way uterine contractions. This is the more to be believed when we remember the effect of injections of glycerine into the rectum, which favour the evacuation of that canal, not merely by the promotion of secretion,

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[1] "Ueber Eklampsie" in *Archiv für Gynäkologie*, xliii., 49, 1892.

[2] *Gynækologische Tagesfragen*, Heft ii., 81, 1891.

[3] "Beitrag zur Eklampsie auf Grund von 81 Fällen" in *Archiv für Gynäkologie*, xlii., 85, 1892.

[4] "Ueber Eklampsie," Volkmann's *Sammlung Klinischer Vorträge*, January 1892.

[5] *Archiv für Gynäkologie*, xlii., 220.

but by irritation set up in the muscular wall, the contractions in which sometimes continue in a tenesmic fashion after defæcation has been completed.

3. The most important influence of the glycerine, however, lies in its well-marked hygrometric property. Its power of absorbing water is so pronounced that it attracts to itself the liquor amnii through the medium of the membranes, and there results from this withdrawal of the liquor a certain degree of collapse of the uterus, such as is seen in cases where the membranes are ruptured and the fore-waters escape. Pelzer cites in proof of this power which glycerine possesses of abstracting liquor amnii through the membranes the observation that may be made of placing an aborted ovum in glycerine, when the walls of the sac will be seen gradually to collapse as the liquor passes through them, until it becomes almost completely absorbed by the glycerine. He has made the experiment, further, of dipping into coloured water a tube containing glycerine, and having the mouth closed with a piece of the membranes, when he found that the glycerine becomes coloured and quickly increased in volume, while the quantity of water diminishes. On the other hand, when he dipped a similarly closed tube containing clear water into coloured glycerine, the water remained clear, but quickly lessened in quantity,—all showing that the liquid was powerfully absorbed by the glycerine.

Pelzer tells us, moreover, that he was the rather disposed to make use of this means of inducing premature labour because of the consideration that glycerine possesses distinct antiseptic qualities, and that it was likely to exert a beneficial action as an emollient in promoting the relaxation of the soft canals. A substance having such valuable properties as an antiseptic, hygroscopic, emollient and stimulant, he justly remarks, is likely to prove serviceable, not only for the induction of premature labour, but in all cases where, at the close of pregnancy, it becomes necessary to hasten the labour. "Among these," he says, "are to be reckoned the accidents which threaten the life of the mother or children, such, *e.g.*, as eclampsia." The results of its employment in the case before us fully justify the anticipation thus expressed.

Following up his further suggestion, that it might be helpful for the promotion of labour in cases of protracted first stage, we made trial of glycerine injections in four other Maternity cases, with encouraging results. Thus, in an viii-para with a small pelvis, where the os only admitted the finger-tip after the first stage had lasted fifteen hours, an ounce of glycerine was injected, and in four and a half hours afterwards, without any other interference, the os was fully dilated. In a i-para, where, after the lapse of fifteen and a half hours, the os only admitted the finger-tip, half an ounce of glycerine was injected, with the like result of full dilatation of the os in four and a half hours. In the other two cases the observations were not so simple, as in one of them morphia and chloral had also been administered; and in the other, a case of placenta prævia, a Barnes' bag was used to promote the dilatation. In both of them, however, the influence of the glycerine injection in promoting uterine action was quite observable.

I may add that on a recent occasion my friend Dr James Young sent for me to see with him an elderly primipara, in whom the first stage had been going on for a day and a night without producing dilatation of the os beyond the size of a two-shilling piece. I could not meet him at once, as I had an engagement at Portobello, but asked him in the meantime to make use of the glycerine injection. When I arrived, two hours later, the canals had become sufficiently dilated to allow of the extraction of the child with forceps. Dr Young remarked that the glycerine had worked like magic in stimulating the uterine action and releasing the rigid tissues, and wondered that he had never before heard of its virtues in this respect.

It should be observed that there were found to be indications of sugar in the urine that was first drawn off from our patient after her admission to the Maternity, which was, no doubt, rightly enough attributed to the injection, and might indicate the partial absorption of the glycerine. For it is believed to be eliminated in the urine in a form which gives some of the reactions of sugar; and it may be well to bear in mind that, if absorbed largely, it is said to cause hæmoglobinuria.

As to the manner of application of the glycerine, it will be seen from the record that two different methods were adopted. At one stage cotton wadding soaked in glycerine was introduced into the cervical canal. This is the method suggested by Kehrer[1] in his account of the different procedures that may be adopted for induction of premature labour. He is the only other obstetrician besides Pelzer who seems to have made use of glycerine in this direction, and all he says is,—"Tamponing of the cervix with glycerine-wadding has proved itself a means of exciting strong pains in several cases recently observed in our klinik, and is therefore worthy of further trial. Perhaps the glycerine acts on the uterine musculature in the same way as the Oidtman glycerine clysters on the bowel." Its application in this manner, however, did not seem to produce such satisfactory results as the direct injection of the fluid through the os internum into the lower segment of the uterus in the manner advocated by Pelzer. When care is taken to fill the syringe to the very nozzle with glycerine, so that all air is expelled, the procedure seems to be unattended with any danger. One, two, or three ounces are slowly injected, and though some of the fluid may escape at once past the tube, a sufficient quantity passes in between the membranes and the uterine wall, and lodges there, to produce the desired effect. This seems to come about very speedily, as the uterus soon begins to contract if it has been previously quiescent, or to contract more vigorously if the pains were feeble. In cases where the uterine action is not so energetic as is desirable, the injection may be repeated; and I see no reason why it should not be repeated again and again, although, as far as experience goes, the second injection proves sufficient.

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[1] *Die Operative Geburtshülfe*, p. 40.

The experience as yet is admittedly very limited. But it is at least sufficiently encouraging to warrant me in bringing Pelzer's procedure under your notice, and commending it to your careful consideration and practical application.

II.—THE DISORDERS OF SPEECH.

By JOHN WYLLIE, M.D., F.R.C.P. Ed., one of the Ordinary Physicians to the Royal Infirmary, Edinburgh; Lecturer on Medicine in the Edinburgh School.

(*Continued from p.* 802.)

APHASIA :—PHYSIOLOGICAL PREFACE; WITH NOTES UPON THE LEADING FEATURES OF APHASIA, AND UPON THE HISTORY AND LITERATURE OF THE SUBJECT.

Mental Percepts of Objects.

PSYCHOLOGISTS tell us that our primary and most simple idea of an object is formed by the revival in our minds of the impressions that the object has made upon the sensorium, through the organs of sense.

With the view of bringing home to my own mind the truth of this proposition, I made, some time ago, a series of little experiments with a number of apples. I found these experiments of value to me, not as teaching anything new about the relations of sense-impressions to ideas, but as illustrating those relations in a vivid and interesting way. In the hope that they may, in like manner, be helpful to the reader, I shall here make a brief note of them. They consisted simply in appealing to each of the senses separately, by means of an apple, and in watching how readily the sense-impression would suggest to the mind the idea of an apple; and how the name or word-symbol "apple" would rise up in the mind along with the idea.

At the Royal Infirmary I got together a few children from the surgical wards, and, having put them together into a room by themselves, I called them one by one into my own side-room.

The first, a boy aged six, was shown an apple lying upon the table, and was asked what it was. He said at once, "It is an apple."

The second, also a boy of six, had his eyes bandaged, and was asked to smell the object put before his nose. He too said at once, "It is an apple."

The third, a boy of nine, had a bit of apple put into his mouth, after his eyes had been blindfolded and his nostrils closed. He chewed it, and said immediately, "It is an apple." (Although the nostrils were closed, it is of course quite possible that some of the flavour of the apple may have reached the Schneiderian membrane by the posterior nares.)

The fourth, a boy of ten, having been blindfolded, had an apple put into his hands. When asked what it was, he said, after having felt it for a moment, "It is an apple."

Hitherto, in the experiments, the mind had promptly come to a correct conclusion from the information supplied to it by the sense appealed to. But now we proceeded to make an appeal to the sense of Hearing, which is much less frequently called upon to receive impressions from apples than any of the other senses. As was to be expected, we found that the conclusion arrived at by the mind from the evidence of sound was not so often correct. We made the sound by paring an apple with a table-knife near the ear of the person experimented upon, after his eyes had been blindfolded and his nostrils closed. Sixteen persons in all, mostly adults, were tried in this fashion, and of the whole number only three answered correctly, "You are paring an apple." The others thought we were paring wood, clipping paper with scissors, rubbing salt, rubbing two surfaces of cloth together, etc.

Lastly, I have frequently had occasion to observe that the Muscular Sense has made itself familiar with one of the properties of an apple, viz., its weight. I have in my possession a beautiful imitation-apple, made of some heavy metal, but painted on the surface in excellent imitation of a Newtown pippin. With the eye alone, no one can tell that it is not an apple, but when I ask a friend if he has seen "this new variety of apple," it is interesting to watch how, in all good faith, he prepares to examine it, and how instantly he detects the deception when the object is put into his hand. From the information given by the eye, the mind thinks it is an apple; but this conclusion is at once flatly contradicted by the evidence furnished by the muscular sense.

Now I think such little experiments are helpful, when we are trying to realize the relations between sense-impressions and ideas. As I have already indicated, it is now generally held that the primary and most simple idea we form of a thing—say, an apple—is but a revival of the sense-images or memories of it that have been stored up in the cortical centres belonging to the various senses. Each organ of sense has its cortical centre in the brain. Here new impressions, received from without, are constantly presented to the consciousness. If the impressions are not attended to, they appear to pass away utterly in a short time, leaving little or no trace in the memory. But if the attention is either voluntarily directed or involuntarily attracted to them (and some impressions are so powerful, or so fraught with pain or pleasure, as to demand attention), then they are registered in the local memory of the centre; and, so long as the registered impressions remain distinct in the memory, they may be revived in the imagination, either by effort of the will, or, involuntarily, at the suggestion of some associated sense-impression or other memory. Thus each cortical centre for sense-impressions should be regarded as not only a receiving office for fresh impressions, but also a storehouse of old impressions that have been duly attended to, registered in the memory, and linked with associated sense-impressions stored in other centres.

When the apple was put to the child's nose, the smell of it was recognised as one already registered; and the revival of this registered smell called up at once, in the mind, revivals of the other sense-impressions derived from apples; the members of the group of impressions being so linked together by association that one member cannot be revived without there being a more or less distinct revival of the others along with it. It is this congeries, or complexus, of revived images that we call the Idea, or Percept, of an apple. No doubt, in the complexus, some one of the sense-images is generally more distinct and important than the rest—our percept of an apple, for example, contains the visual element more distinctly than the olfactory;—but all the senses that have received impressions are at least ready to contribute; even the muscular sense being ready, as we have seen, to give distinct evidence when appealed to.

This reference to the Muscular Sense leads me to add that according to the teaching of some eminent psychologists, especially of Professor Bain, Memories of Motion are always stored up in the brain along with the memories of sensation, and are revived along with them when the idea of an object is formed. Each organ of sense possesses muscles (such as those of the eyeball, the nose, the middle ear, etc.), and these are called into activity when the organ is actively receiving impressions. It is held that the muscular activities record their memories in the brain, and that these motor memories blend with the sensory in our percepts of things. Dr Ferrier thus illustrates the views on this subject which he shares with Professor Bain,—"Our ideas of form are not mere revived optical impressions, ... but optical impressions combined with ideal ocular movements. Our idea of a circle is a combination of an ideal coloured outline, with an ideal circular sweep of the eyeballs, or it may be of the tactile impressions coinciding with an ideal circumduction of the arm or hand, or perhaps both these factors combined. . . . . To revive any of these ideas is to revive both the sensory and motor elements of their composition, and we tend in ideation to repeat the actual movements which were concerned in the primary act of cognition."[1] I may here note, as further interesting in this doctrine of an element of motor memory in our primary ideas of Objects, that it recalls to our minds the motor memories that form, in addition to the sensory memories, so important a part in our ideas of Words; a subject I shall return to presently.

We come now to a very important question. When the idea of an apple is thus formed in the mind by the blending of the various memories, sensory and motor, that have been revived at their respective centres, how is this blending effected? Are the revived images gathered together into a special Ideational Centre, in some particular part of the brain, and there blended; or are the images allowed to remain each in its own original situation, and merely taken cognizance of by the intelligence, while thus remaining *in situ?* The latter seems to be the view that derives support from all the facts known to us. There is no proof that there is anywhere in the brain a local ideational centre. If there were such a centre, the local destruction of that particular spot would make ideation impossible. But there is no case recorded in which mere local destruction of a limited portion of the cerebral cortex has produced such an effect. The evidence, as it stands at present, seems all to point to the conclusion that the presiding Intelligence, which takes cognizance of, fixes, and groups together these impressions, so as to form Ideas from them, is not a faculty that is specially localized in the anterior part, or in the middle or in the posterior part, of the brain-substance, but is one that belongs to the cortex as a whole. It would appear to be more especially connected with the more superficial layers of the cortex; but the evidence in favour even of that supposition is not entirely conclusive. It is by this pervading faculty, the Intelligence, that the images are revived and taken cognizance of, while they yet remain *in situ.*

It is now generally believed that if one of the cortical centres for sense-impressions were extirpated from both hemispheres, the store of memories amassed at that centre would be utterly obliterated from the mind. On this subject Dr Ferrier says:—"The destruction of the visual centre, therefore, not only makes the individual blind presentatively, but blind representatively or ideally, and all cognitions into which visual characters enter in part or whole, become mangled or imperfect, or are utterly rooted out of consciousness."[2]

Granting, then, that our primary and most simple cognitions of things are merely the results of this revival and blending of sense images, and that the group of images constitutes in fact the Idea in our minds which represents the Thing, let us now look at the relation of this idea of an object to its name.

In the first place, it should be noted that the simple idea of a concrete object may be perfectly distinct in the mind, even when we have, for the time, utterly forgotten the object's name. Although we are not liable to forget the names of common and familiar objects, we have, most of us, had experience of forgetting, for a few minutes, the proper name of some familiar acquaintance. We know that, in these circumstances, the mental image of his personality loses nothing, in distinctness and completeness, from the loss of the name. It is so with regard to everything of which the mind can form a clear and distinct image or memory: we can think of it clearly, even when the word expressive of it is for the moment forgotten. I believe that if we had no words to express such actions as walking, running, or flying; or such colours as red, blue, or yellow; or such qualities as prettiness or ugliness; or such emotions as affection or anger,—we could yet, after having had frequent experience of them, recall them to mind, and think of them, without the aid of words. The fact that those deaf-mutes who have not been educated to speech can yet, as their actions show, think rationally, though not profoundly, proves that this must be the case.

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[1] *The Functions of the Brain*, 2nd edition, 1886, p. 437.

[2] *Op. cit.*, p. 429.

But there are some forms of thought that cannot be carried on without the aid of verbal symbols. Names of concrete objects are the verbal symbols of the simplest ideas we have of things, ideas so simple that they can be easily grasped by the mind without the aid of their verbal symbols. But we have also a long array of names or nouns that are the symbols, not of concrete individual things, but of classes of things, as well as many nouns that are the symbols of abstract qualities; and such nouns are very largely used even in ordinary conversation. These nouns are the products of that effort to classify things which has always been carried on by the human mind. Any classification of things, however rude, represents much labour of observation and comparison. Concrete objects have been placed side by side, and the like have been separated from the unlike; and when a number of objects that are related to each other in their qualities have been grouped together, a name is given to designate the group. Then groups are compared, and are classified into groups of groups, and so on, until ideas of things in general have fallen into some kind of order in the human mind. This is a process that has, instinctively and almost unconsciously, been carried on throughout human history; it is also the process that is carried on consciously, and with a definite view to classification, by the cultivators of every branch of natural science. As the conceptions rise from the particular to the general, a name is given to mark each step in the process; and the more general and abstract the conception, the more necessary is it for the mind to invent a name that may be used, in the processes of thought and speech, as a definite symbol for a concept that is itself, of necessity, indefinite and shadowy. "A word or sign," says Sir William Hamilton, "is necessary to give stability to our intellectual progress, to establish each step in our advance as a new starting point for our advance to another beyond. A country may be overcome by an armed host, but it is only conquered by the establishment of fortresses. Words are fortresses of thought: they enable us to realize our dominion over what we have already overrun in thought, to make every intellectual conquest the basis of operations for others still beyond. . . . . Though, therefore, we allow that every movement forward in language must be determined by an antecedent movement forward in thought, still, unless thought is accompanied at each point in its evolution by a corresponding evolution of language, its further development is arrested." Speaking of the formation of concepts by the abstraction of the resembling qualities in objects, he says,—"The concept thus formed by an abstraction of the resembling from the non-resembling qualities of objects, would fall back again into the confusion and infinitude from which it has been called out, were it not rendered permanent for consciousness by being fixed and ratified by verbal sign."[1] Surely these sentences put the relationship of words to the higher and more abstract class of ideas very clearly and succinctly.

The great fact having been realized that a sound can be made to serve as a symbol for anything that is perceived or imagined by the mind, the effort of all cultivated speech is to make the symbolic representation as complete as possible. Nouns indicate things, verbs actions, adjectives the qualities of things, adverbs the manner of acting, prepositions and conjunctions the relations of things and actions to each other; and so a whole train of thought finds its expression in a train of words. But, as we have seen, the use of words does not stop here. Words not only express thought, they also support and assist it. When an idea is abstract and vague so that no well-defined image is formed by it in the mind, a word is invented by some thinker who has realized the idea with exceptional clearness. This word adds to the thought something that has distinct body and definition, so that, afterwards, the thought, with its associated symbol, can be grasped and retained by ordinary minds. Language also facilitates and improves the operation of the thinking faculties in many other ways. The fact, for example, that we have in books the well-digested thoughts of the best thinkers of our own time and of past ages is a fact of infinite importance in relation to the development of the power of thought; because books not only supply knowledge, the material for thought, but also do much to train the mind to habits of accurate thinking.

Mental Percepts of Words.

In the foregoing remarks I have treated of the nature of our mental percepts of objects, and have noted briefly some of the relations existing between thought and speech. I now wish to devote a little attention specially to the question—What is the nature of the mental percept that we form of a Word?

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[1] *Lectures*, vol. iii. pp. 138-140, quoted by Bastian in *The Brain as an Organ of Mind*, p. 418.

We have seen that when the child smelt the apple a percept of the object was immediately formed in his mind, by the revival of a group of images or memories; and we have seen that this group probably included motor as well as sensory elements. But, alongside of this percept of the object, there arose in his mind, at the same time, what I shall venture to call *a second percept*, viz., that of the verbal symbol of the object, the word "apple." Now, what is the nature of this second percept? The tendency of the best physiological and psychological research seems to be to answer this question by saying that the mental percept of a word is, like the mental percept of an object, a blending of memories or images that have been stored up in special centres of the cerebral cortex. The memories are two in number, a sensory and a motor.

In the language of a nation a certain articulate sound has come to be the symbolic representative of a certain definite idea. This sound is learned by each child of the nation; at first, it may be, as a mere sound, but presently as a symbol also. It is in the cortical centre for hearing that the sound is first registered. By-and-by, under the guidance of the auditory centre, the child trains the motor centre to reproduce the word heard; and by this training it acquires a second image or memory, which is imprinted at the motor centre. Presently this motor reproduction of sounds becomes so interesting an exercise to the child, that, as we saw formerly, he reproduces many words that he hears, in parrot-like fashion, by Echolalia, without making any attempt to understand them. But before the stage is reached at which echolalia is exhibited, and before, indeed, the child can articulate any single word, a number of word-memories have been imprinted upon the auditory centre, and have even been associated with their proper meanings. At this early stage, as Prof. Bain points out,[1] the child will turn his head towards his brother when he hears the name "Johnny" pronounced; though it is very improbable that the word "Johnny" rises up in his memory when he spontaneously looks at his brother. The child has not yet acquired the motor picture of the word. He is as yet at the stage at which the education of the receptive centre is obviously ahead of that of the productive or motor. In the process of learning a foreign language, we all have experience of a stage in our educational progress that is somewhat similar to this. I mean the stage at which we can read and understand the language, but cannot yet speak it. The sensory word-pictures have already been extensively acquired, and they have been associated with the ideas of which they are the symbols; but the motor pictures have not yet been acquired to the same extent. Until the motor pictures are also fully acquired, we are not able to call up words readily in our minds when we wish to use them in conversation. Practice in speaking the language will alone be able to give us this facility. The sensory images are thus of special importance in relation to the reception and interpretation of speech, the motor images in relation to its production. A foreign language is not perfectly acquired until both sets of images have been securely imprinted. Our mental percepts of words are not perfect until both sets of images are revived simultaneously, and are blended together into one in the consciousness. How this blending is effected is as difficult of explanation as is the blending of the sensory and motor images into the percept of an object. But everything goes to show that in this case again there is no special centre for the process of blending: the images remain *in situ*, and seem to be taken cognizance of simultaneously by the presiding consciousness or intelligence, the nature of which is so great a mystery to us.

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[1] *Fortnightly Review*, vol. v., 1869, p. 494.

Here I come to say a few words about a problem regarding which much that is interesting has been written. What is the nature of the Internal Speech which we employ in the process of thinking?

Some hold that we do much of our thinking without the aid of words. Thus Bastian[1] says:—"There can be no doubt that when thinking, much of the process is carried on automatically, and our consciousness is engaged but to the smallest possible extent with the mere vehicle for our thoughts, whatever be its nature; we are intent only upon the ideas for which the symbols are used, and not upon the symbols themselves." But, granted that this is true, it is also generally admitted that when we are working out difficult thoughts, and preparing them for articulate expression, we become more and more conscious of shaping them into words and phrases: and that, in ordinary processes of thinking, words and phrases associate themselves in our minds so readily with the thoughts, that the thought and the word seem to be almost inseparable. Now, what is the nature of this internal speech? Let us carefully attend to our internal sensations as we mentally repeat a line of poetry, or as we silently read a sentence from a printed page. We find that we are most distinctly and definitely conscious of the words we are thus repeating internally. We are conscious even of the cadences of the internal voice, and of the emphasis that is put upon the more important words. Is it the auditory images that we are conscious of? Bastian[2] says it is; and there can be no doubt that there is a large auditory element in this internal speech, its tones being so distinct in our consciousness. But Bain has long taught that in internal speech the motor element is much more prominently represented than the auditory.[1] In proof of this, he points out that internal speech seems sometimes at the very verge of utterance; as is shown by the little movements we may feel in the tongue, from time to time, when we are silently thinking. Stricker of Vienna[2] insists even more than Bain upon the predominance of the motor pictures in this internal speech of silent thought; and he thinks that even in internal song the motor images are the predominant ones. We can sing a song silently, in our minds, either with the words or without them. I find, when I mentally sing a song, with or without its words, that it is impossible to prevent my *pomum adami* from moving upwards when the mental melody passes into its highest notes; but, at the same time, I am most clearly conscious of the varying pitch and cadence of the internal voice. Evidently, in internal speech and in internal song, we revive both images, the sensory and the motor; and the two seem to our consciousness to be welded into one.

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[1] *Fortnightly Review*, 1869, note to p. 62.

[2] See article on the "Physiology of Thinking," *Fortnightly Review*, 1869, p. 57; and the author's works on the *Brain as an Organ of Mind*, 1880; and on *Paralysis, General, Bulbar, and Spinal*, 1886.

There is good reason to believe that the discussion and difference of opinion regarding the relative importance of the two word-images in Internal Speech may be due to the fact that individuals are differently constituted: in some the sensory image, and in others the motor, being the more vivid of the two. Further, educated people, who can read and write, have, in addition to the two ordinary speech images, also two others, viz., the visual, by revival of which they read, and the graphic-motor, by revival of which they write; and among such people we certainly meet with cases where the visual images are extraordinarily vivid. So that it is reasonable to suppose that, among people generally, the predominant image in internal speech may in some be the auditory one, in others the motor, and in yet others the visual. Prof. Charcot has paid special attention to this subject. His pupil Bernard[3] says,—"M. Charcot emphatically teaches that the memories of signs, like other memories, present, in different individuals, different degrees of comparative development, owing, it may be, to inheritance, or to custom, or to education. One individual will appeal more frequently to the visual memory of signs, another to the auditive, and another to the motor. It may thus happen that the pre-eminence of a centre may become so marked, that it may hold under its sway, not only what properly belongs to it, but also another or several other centres. For example, the visual centre for words may control not only that for writing, but also that for articulate language. In the same way, the motor centre for speech may become independent of the sensorial centre which had presided at its education. Thus are constituted, among speakers, the *visuels*, the *auditifs*, and the *moteurs*. This is not a speculation pure and simple. I have already recorded several notable examples of such selection." Charcot and Bernard think that the majority of people are *auditifs*.

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[1] See *The Senses and the Intellect*, 3rd edition, p. 399; and an article in the *Fortnightly Review*, 1869, p. 492.

[2] *Du Langage et de la Musique*, 1885. This French translation of the German work is really a new edition, containing chapters on the Physiology of Music not previously published.

[3] *De l'Aphasie*, p. 48.

Bearing in mind that the auditory and motor images are revived together, but that the auditory images are of special importance in relation to incoming, and the motor to outgoing, speech, I think we may sum up the ordinary relationships of the two sets of images in the following propositions:—

1. That, when we hear words spoken to us, our auditory images are strongly revived, and our motor images are revived only faintly, if at all.

2. That, when we ourselves speak *aloud*, our motor images are particularly vivid, our auditory images being much less so. [Nevertheless the auditory images play, even here, in most persons, a very important *rôle* in guiding the formation of the motor images; as is shown by the fact that in cases of word-deafness—which implies the obliteration of the auditory store of images—the motor centre may emit the *wrong* words when the patient tries to speak; as will further be shown by-and-by.]

3. That, when we use words *internally*, in process of thinking, the auditory and motor images are revived together with about equal distinctness. [For simplicity's sake, we may term this combination of the auditory and motor images the Primary Couple.]

4. That when we read printed or written words, we revive the visual images, and that these at once call up, by association, the Primary Couple used in internal thought; so that, in reading, at least three sets of images are revived. [There is reason to believe that the mental percept of a written word is not complete without the presence in it of at least a faint graphic-motor element. This point will, however, be considered in connexion with Agraphia.]

5. That when we are about to write, we first revive the Primary Couple, in thought. Then we revive the visual image of the letters and words we are about to write; and lastly we revive the graphic-motor images, and forthwith exteriorize them by the act of writing. The act of writing thus implies a revival of all four sets of images—the primary couple that we use in thought and speech, and the secondary couple that we use in writing. [Observe that, in ordinary circumstances, the graphic-motor images are formed in accordance with, and at the guidance of, the graphic-visual images. It follows that the destruction of the visual images (in word-blindness) will damage the power of writing. It is so in most cases; but, in some patients previously much practised in writing, word-blindness does not materially interfere with the power of writing; the graphic-motor images having, by long practice of writing, become so strongly imprinted as no longer to require the guidance of the visual images. In such cases the

patient may write well, though, being word-blind, he will not be able to read the words he has just written.][1]

Union of Words with their Meanings.

Using the idea and the name of an apple as examples, I have already directed the reader's attention to the simultaneous rising up in the mind of two percepts—that of the object and that of its name;—and have shown each of them to be constituted in a similar way by the revival and blending of images. Now, how is the idea-percept or meaning attached to its verbal symbol? Does the meaning, as is held by some, always attach itself in a special manner to the auditory word-image, and filter thence down into the other word-images? There is a good deal to be said in favour of this view, inasmuch as it is found that word-deafness (obliteration of the auditory word-images) not only cuts off the mind from incoming audible speech, but also makes it difficult for thought to find expression in out-going words. The Primary Couple, in such cases, has been mutilated by destruction of its better half; and, in some of them, the words supplied by the unguided motor-centre are given at random, and may fail to express the thought that is seeking utterance. In most of these cases, however, considerable power of expression remains; and in some the power of expression seems to be but little affected. No doubt these differences are to be explained, as Charcot has explained them, by referring them to the varying development and prominence of the individual images in different individuals. In the majority of persons, the auditory image seems to be the most prominent; in the minority the motor. The idea-percept or meaning seems to attach itself to *both* images of the primary couple, but the attachment is strongest to the more prominent image. In reception of words, the auditory image is most prominent; in production, the motor.

The Secondary Couple of images, those for reading and writing, lie, during the process of ordinary thought and speech, in the background, unrevived. Even when revived, as they are in reading or writing, they are not, in ordinary persons, brought into direct association with the idea-percepts. They are connected with these only indirectly, through the primary couple, as has been explained in Nos. 4 and 5 of the foregoing propositions. In only a very few individuals does this law seem to be infringed by the visual images. It is said that, in a few rare cases, literary men have acquired the power of directly associating printed words with their meanings, without translating the printed symbols into "internal speech." But such cases must be extremely rare. The normal law evidently is that the secondary couple shall act as the servants and the symbols of the primary couple, and that the word-percepts of the primary couple shall alone be brought into immediate association and union with the idea-percepts.

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[1] There is, however, another explanation of the fact that some word-blind patients can write and others cannot. But as this explanation is new and still *sub judice*, I reserve its consideration until I take up the subject of Word-blindness.

It has already been indicated that an Idea-percept may be formed in the mind without its associated word-symbol: as when we think of a person or an object whose name we have forgotten. It should also be noted that we can form in the mind the percept of a word, without the percept of its meaning: as when we think of a word whose meaning we have forgotten. To a young child, it is easier to form in the mind the one percept or the other, singly, than to form both together. The child forms in its mind a distinct percept of, say the pet-dog, long before the word-percept "bow-wow" has come to rise up in its mind, as the dog's name, when the dog is looked at; and, again, at a later stage, the child delights in repeating in parrot-fashion words just heard, without as yet attempting to attach any meaning to them. In the first case it is forming object-percepts, in the second word-percepts, pure and simple. To form the two percepts, word and meaning, simultaneously, and to weld the two firmly together so that the one will at once call up the other, is a more difficult accomplishment, that comes later.[1] How difficult it is, we can realize when we are trying to learn a foreign language. At first, we read the foreign words but do not understand them. They are as yet to us pure word-percepts. Then we use our dictionaries, and find the translation into our own speech. Having acquired the power of translation, we mentally translate the foreign into our own language before we can arrive at the meaning. But if we thoroughly master the foreign language there will, in due time, be no necessity for translation: the foreign word-percepts will gradually establish the same direct relations to the meaning as the native word-percepts, so that we shall be able to *think* as well as speak in the foreign language. It is a long and difficult process, this of securely imprinting new word-pictures in the cerebral centres, and associating them directly with meanings. The recognition of its difficulty should bring home to our minds the truth that, when we are easily and pleasantly reading a book, we are not imprinting new word-images in our speech-centres, but are only reviving old images, and refreshing them by re-imprintation. These images have been long established in our word-centres, and have been linked in our minds with the ideas of which the words are the symbols. They can be revived from without, by speech that is heard or seen. They can be revived from within, by the thoughts that arise in our minds.

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[1] The lower animals undoubtedly form percepts of objects abundantly; but few of them can form percepts of words. The more intelligent of them, however—the dog, for example—can acquire some auditory images of words, and can attach these to their proper meanings, so that they understand the word when it is spoken to them; but, having no motor-image or articulative power, they cannot themselves speak. The parrot and other speaking birds acquire both images, auditory and motor, so that their word-percepts are complete; but only in a very few rare cases has a parrot intelligence enough to attach a few of its acquired words to their proper meanings. Thus the chief difficulty in learning to speak intelligently seems to be for the brain to acquire the capacity and the habit of embracing in its consciousness at the same moment two percepts, that of the word and that of its meaning.

Departure of many Words from their Original Meanings.

This interesting subject the reader will find fully discussed by Archbishop Trench in a well known work of his.[1] He shows that:—(1.) Words may become changed in meaning by acquiring a signification *narrower* than that which they originally possessed. Thus, to take one of his examples, the word *girl* meant originally a young person of either sex, but is now narrowed to half that width of signification. (2.) Words may gradually acquire a meaning much *wider* and more general than that which they originally possessed. Thus, *bombast* originally meant the down of the cotton plant; then it became the wadding with which garments were stuffed out and lined, and in this sense it is used by Shakespeare; and, thirdly, "bombast was transferred in a vigorous image to the big words without meaning or solidity wherewith the discourses of some were stuffed out, and knows at present no other meaning but this." (3.) Words, thus sliding away from their original meaning, may at last acquire a meaning *altogether different* from the original one. Thus a country serf or peasant was at one time styled a *villain* because he was attached to a villa or farm. Secondly, the word came to mean a serf or peasant who was at the same time a bad character. Thirdly, any thoroughly bad character came to be styled a *villain*, though he might not be a peasant at all. For further illustrations, I must refer the reader to the interesting work from which the above are taken.

But there is a lower depth to which language may sink. Words and phrases, losing entirely their definite meanings, may come at last to be used as *mere sounds* to give an emphasis to speech, such as might otherwise be given by mere loudness of tone; or they may come to be used as mere emotional or conventional expressions, whose meaning is contained as much in the tone of the voice as in the words employed. Swearing best exhibits both of these degraded uses of words. Nobody has better treated of these degradations of words into mere conventional and emotional expressions than Dr Hughlings-Jackson. In concluding an excellent analysis of common swearing, he says,—"Vulgar people insert an oath 'at the proper intervals of their speech' as a sort of detonating comma, and thus they render forcible, statements which might otherwise strike their hearers as common-place."[2]

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[1] *English Past and Present*, chap. vii.

[2] *Lond. Hosp. Clin. Lect. and Reports*, vol. i., 1864, page 453.

(*To be continued.*)

III.—PACHYDERMIA OF THE LARYNX.

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(*Read before the Edinburgh Medico-Chirurgical Society, 1st February* 1893.)

Although a perusal of the works of Stoerk,[1] and even those of older laryngologists, would lead us to believe that this affection had not altogether escaped the notice of writers on throat disease, yet it was not until after the illness of the late German Emperor that pachydermia laryngis began to attract general attention. It would appear that Hünermann, in an inaugural dissertation published in 1881, first described the form of the disease, which attacks the posterior extremities of the vocal cords. After this pachydermia does not seem to have received any attention until, in 1887, Virchow[2] gave a most learned and perfect account of the condition. He begins by calling attention to the investigations of Rheiner as to the character of the laryngeal mucosa, which showed that pavement epithelium is found in abundance both in the inter-arytenoid commissure and on the true cords. He next points out that the epidermis of the lips is continued as the stratified epithelium of the mouth and digestive tract, and he believes that the continuation of this into the above indicated regions of the larynx points to what he terms a dermoid habit of the parts (*cutanen oder dermoiden Habitus*). Virchow then describes how he frequently met with symmetrical elongated swellings of oval shape, situated in the region of the vocal processes. In the centre of each he describes a pit or hollow, which he attributes to the fact that in this position the mucosa is in more intimate contact with the cartilage. In association with these localised thickenings, the epithelium of the vocal cords was usually found thickened, and sometimes a very marked development of epithelium was found in the inter-arytenoid region, in which fissures were occasionally noticed. In Germany quite a considerable amount of literature has accumulated concerning pachydermia laryngis, but little has been added to Virchow's classical description, even from the clinical standpoint. The first detailed description of pachydermia from the pen of a laryngologist is by B. Fränkel,[3] who describes the swellings on the vocal processes as of a whitish rose or red colour, and the indentations or pits as clearly visible. Fränkel also gives a detailed description of a microscopic section through one of these tumours, which in the main agrees with Virchow's account of the diseased process, viz., great thickening of epithelium, horny changes in the outer cells, and multiplication of papillæ. With regard to the presence of the pits or indentations in the tumours, Fränkel points out that probably they are caused by pressure in the act of phonation, and that the raised part of one tumour corresponds to the depression on the other; for in this way only could the complete closure of the glottis, which he has often observed, be accounted for. He further calls attention to the differentiation of pachydermia from cancer, and rightly observes that where a localised thickening of the cord confined to the region of the vocal process is found, pachydermia and not cancer should be first thought of, even although there may be some impairment of motion on the part of the cords,—a symptom which he has twice observed in connexion with pachydermia.

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[1] *Krankheiten des Kehlkopfs*, 1880.
[2] *Berlin. Klin. Wochens.*, 1887, p. 585.
[3] *Deut. Med. Wochens.*, 1889, p. 30.

Probably the next in order of important contributions to the subject of pachydermia is from the pen of Sommerbrodt.[1] He seems to have recorded in all eighteen cases, and in addition gives details as to two observed respectively by Réthi and Michelson. In all of these the patients were males, and the pachydermia affected the vocal processes. Both were usually thickened, presenting the characteristic oval swellings, and usually the prominence on the right process was received into a depression on the left. Sommerbrodt points out that the diagnosis depends upon the presence of the symmetrical swellings, which, owing to their peculiar formation, interfere but little with the voice, because, owing to the corresponding elevation and depression, glottic closure is complete. In tubercular ulceration or malignant disease affecting the vocal processes the voice is much more affected. In one case Sommerbrodt found that the patient had also leukoplakia in the mouth,—an interesting observation, as Fränkel had previously pointed out how analogous is the pathology of the two conditions. According to Sommerbrodt no treatment seems to have any effect on the condition, and he does not advocate operative interference.

Meyer[2] was also among the earliest writers on the subject under discussion, and had an opportunity of recording eleven cases. All his patients, too, were men between the ages of 35 and 40; and he is inclined to attribute considerable importance to excesses in alcohol and tobacco as etiological factors. According to Meyer the subjective symptoms are not marked: a feeling of pressure in the throat, slight pain on deglutition, and more or less huskiness comprise those observed. It is remarkable that in seven out of the eleven cases deficient abduction of the vocal cords was observed. Meyer, too, advocates treatment directed towards the often coincident pharyngeal and laryngeal catarrh, and the administration of small doses of potassium iodide. Under this treatment, he states, the subjective symptoms disappear and the tumours diminish in size. In all the cases excepting one the thickening seems to have been confined to the region of one or both vocal processes—usually the latter—and not to have appeared on the posterior wall of the larynx. Meyer's paper was read before the Laryngological Society of Berlin, and in the discussion which ensued Sandmann related a case in which marked ulceration followed, associated with pain in the ear, and the ulcer only healed after the curette had been freely used. On reading his remarks,[1] the question occurs to me whether this was really a case of simple pachydermia; and the same applies to Krakauer's[2] case of severe perichondritis, stated to have resulted from pachydermia. O. Chiari, in a paper read before the International Congress of 1890,[3] and published separately as a monograph, states, "That from the results of histological examination of fragments removed from the vocal process (one case), and from the inter-arytenoid fold (four cases), with cutting instruments, and from a consideration of a number of horizontal sections of the inter-arytenoid fold, arytenoid cartilages, and vocal processes, and sections of the vocal cords themselves in thirteen larynges, lead him to the conclusion that pachydermic changes of slight amount (*i.e.*, thickening of the epithelium, development of papillæ) are of frequent occurrence in the inter-arytenoid fold, and that even larger thickenings are met with in this region without the occurrence of any similar change in the vocal cords. When examined with the microscope these show thickening of the epithelium and numerous papillæ. Of typical pachydermia on the vocal process Chiari had only seen one case, in 1882, which he then had drawn. Of special importance was the case of a man who died of cirrhosis of the liver, in whom there was a very large tumour in the inter-arytenoid region. As causes of pachydermic changes in the larynx, especially in the inter-arytenoid commissure, chronic catarrh, abuse of alcohol and tobacco, tuberculosis, and syphilis must be especially cited. Tuberculosis especially produces large pachydermic masses, which only ulcerate after a long time. In order better to appreciate these changes in the inter-arytenoid fold, Chiari referred to the normal structure of this region. The mucosa in this situation, which is very thin, and towards the centre in intimate contact with the inter-arytenoid muscle, bears a very delicate stratified epithelium without papillæ; glands are few, but are rather more developed near the arytenoid cartilages. In the last-named situation mucous tissue is abundant and loose."

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[1] *Berlin. Klin. Wochens.*, 1890, p. 429.

[2] *Deut. Med. Wochens.*, 1890, p. 928.

If we turn from the report of Chiari's views, as given in this quotation, to a perusal of his monograph, we find that the cases of pachydermia on the vocal processes observed by him were two in number. In the first the disease was observed soon after syphilitic infection; in the second, which occurred in a man with slight evidence of pulmonary disease, the thickening was confined to the left cord, and removed with cutting forceps. Microscopic examination showed the surface covered by thick layers of stratified epithelium, while the connective tissue underneath contained one giant cell and a few tubercle bacilli. Chiari also cites several cases of inter-arytenoid thickening, but they seem to have occurred in syphilitic and tubercular patients. In four of them the tumours were removed, and found to consist of connective tissue covered by numerous layers of epithelium. In two of these, taken from tubercular subjects, no bacilli could be found in the sections, and in one only were giant cells present. Chiari, after a careful analysis of the literature of the subject and of his own cases, arrives at the conclusion that thickening of the epithelium in the inter-arytenoid space and in the region of the vocal processes may result from chronic catarrh depending on excesses in alcohol, excessive use of the voice, tuberculosis, syphilis, or congestion resulting from heart, lung, and liver affections. To quote his words, "The slightest cases depend upon thickening of the stratified epithelium in parts where it normally occurs. Then more numerous and larger papillæ than normal (papillæ may be absent from the vocal cords and inter-arytenoid commissure) are found. . . . Finally, it comes to thickening of the mucous and sub-mucous tissue, with the formation of tumours which, in the region of the vocal processes, take on the typical character described by Virchow. Here the catarrhal form seems most frequently to locate itself. Still the inter-arytenoid fold—although more rarely—may also be the seat of such hypertrophies resulting from catarrh; in tuberculosis and syphilis, on the other hand, this region is most commonly affected." Most of the recorded cases of pachydermia seem, so far, to have occurred in Germany. Probably Luc[1] is the first French writer who has described pachydermia since Virchow reintroduced the disease in 1887, although Doleris, quoted by Chiari, seems to have recognised the condition, both macroscopic and microscopic, in 1877. Luc describes a case of diffuse and warty thickening of the mucosa in the larynx of a healthy man, the parts affected being the vocal cords and the inter-arytenoid commissure. The hypertrophied parts were scraped with a curette, and histological examination of the removed portions revealed only the presence of fibrous tissue. The same author also relates the case of a localized inter-arytenoid tumour, removed from a phthisical patient, in which histological examination revealed no evidence of tuberculosis, and inoculation experiments with fragments of the growth were also negative.

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[1] *Berlin. Klin. Wochens.*, 1890, p. 235. [2] *Ibid.*

[3] *Verhandlungen des X. Internat. Med. Cong.*, 1890.

Gouguenheim and Glover[2] examined several similar tumours removed from tubercular subjects, and found an outer layer of thickened epithelium, a supporting layer of connective tissue, and at the base tubercular granulations in process of evolution; no bacilli, however, seem to have been discovered. In this connexion it is of interest to note that Stoerk,[1] who always laid great stress upon the fact that a distinctly localised tumour in the inter-arytenoid region was pathognomonic of tuberculosis—either present or future—extirpated one of these neoplasms, and found that it consisted of connective tissue, papillæ, and numerous layers of epithelium, of which the outermost had, according to Kundrat, who examined the specimen, an epidermoid character.

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[1] *Archives de Laryngologie*, 1889, pp. 13, 265.

[2] *Annales des Mal. de l'oreille, etc.*, 1890, p. 509.

Michelson,[2] in 1890, described a typical case of pachydermia of the vocal processes; and recently Kausch[3] has placed on record eleven more instances. In all save one of these the form of disease was that affecting the vocal processes. The patients were all males: eight were frequently obliged to over-exert the voice, three were accustomed to the excessive use of alcohol and tobacco, and one was much exposed to catching cold. It is also worthy of note that in eight out of ten cases the thickening in the region of the vocal processes was bilateral, as in most of the previously described cases. In these eight cases the pit or depression was five times on the right side and thrice on the left. This is of interest, because in almost all Sommerbrodt's cases the depression was on the left side. Kausch also had an opportunity of examining microscopically the papillary excrescences removed respectively from the inter-arytenoid fold in two tubercular patients and the ary-epiglottic fold in one. In these he found marked epithelial thickening, connective tissue, and a few giant cells, but no bacilli.

In the magnificent Atlas published last year by Krieg,[4] we find illustrations of pachydermia in its various forms. In one case the swelling on the left vocal process had projecting from its posterior extremity a small white outgrowth of horny epithelium. In another instance a pachydermia involving the vocal cords on each side of the anterior commissure is depicted.

This is, so far as I know, the only mention of pachydermia of such extent as to give rise to distinct tumours occurring in any part of the larynx excepting the vocal processes and posterior laryngeal wall. As I propose to describe a case in which symmetrical tumours of this nature were situated at the junction of the anterior thirds with the posterior two-thirds of the vocal cords, I shall turn aside for a moment to consider the pathology of a form of symmetrical tumour not uncommonly found in this situation, which is described by German writers as singer's nodule (*Sängerknoten*). These are usually quite pale, and differ little, if at all, from the normal colour of the cords; they are of very small size, and interfere more with the singing than the speaking voice, although the latter also may be interfered with. According to the researches of Kanthack,[5] who examined three of these nodules, their structure varies, but in all the epithelium was altered; thus in one it was in a condition of hyperplasia, in another horny, and in a third both horny and hyperplastic; in two also there was a tendency to the formation of papillæ. Chiari[1] also examined two of these nodules, and found that they were for the most part composed of epithelium, which in one instance sent processes inwards, and thus produced a papillary structure. It will be therefore seen that the relation, from a pathological point of view, between the so-called singer's nodules and pachydermia is a very close one.

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[1] *Klinik der Krankheiten des Kehlkopfs*, p. 285.
[2] *Berlin. Klin. Wochens.*, 1890, p. 238.
[3] *Münchener Med. Wochens.*, 1892, p. 515.
[4] *Atlas der Kehlkopf Krankheithen*, 1892.
[5] *Monatsschrift für Ohrenheilkunde*, 1889, p. 201.

Almost all writers on pachydermia are agreed that the condition is a comparatively innocent one. It may appear that this statement is somewhat rash, considering the comparatively recent date at which the affection was first brought into prominent notice. It does, however, seem to be the case that cancer rarely begins in the region most commonly affected with pachydermia, as pointed out especially by M. Schmidt.[2] Klebs,[3] on the other hand, seems to think that pachydermia may gradually develop into carcinoma, a view which has been energetically combatted by Kuttner.[4] Considering the analogy between leukoplakia of the tongue and pachydermia, and considering, moreover, the fact that the former is known occasionally to develop into cancer, it is questionable whether we dare yet speak of pachydermia as always a perfectly innocent affection, although the weight of clinical evidence tends towards this conclusion.

As we have already seen, the treatment upon which most reliance has been placed is the internal use of iodide of potassium in small doses, unless, of course, the lesion is so situated as to cause symptoms demanding operative interference. Scheinmann[5] has recently recorded good results from very simple methods, viz., sprays of common salt-water or acetic acid (2 to 3 per cent.) Of the two he prefers the latter, and also injects it into the laryngeal cavity with a syringe.

I shall now briefly describe four cases of pachydermia which have come under my observation, and reserve the question of diagnosis for discussion in the remarks appended to each case or group of cases.

Mrs K., æt. 72, was seen in November of last year, complaining of cough, loss of voice, and slight soreness in the throat, and at that time the following notes were taken:—There is a small amount of expectoration, gelatinous in character, and difficult to cough up. There is a feeling of stiffness rather than pain in the throat. There is nothing bearing upon the present trouble in the family history or previous diseases of the patient, who seems to have enjoyed remarkably good health, and has had ten children. The throat affection she thinks had origin in a cold, which she caught about six weeks ago. At that time she noticed she was hoarse in the mornings, and especially when she went out or in damp weather. She had a hard, dry cough, and the voice became altered, having acquired a rough character. It was somewhat difficult to ascertain exactly the habits of the patient, but to some extent at least she indulged in ardent spirits. In appearance Mrs K. is well developed and rather stout. The alimentary, respiratory, and circulatory systems are normal, but unfortunately the urine could not be tested, as the patient was not in hospital, and has not returned since these notes were taken.

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[1] *Prager Med. Wochens.*, 1892, No. 37.
[2] *Verhandlungen des X. Internat. Med. Congress*, 1890.
[3] *Deut. Med. Wochens.*, 1890, p. 537.
[4] *Verhand. des X. Internat. Cong.*, 1890.
[5] *Berlin. Klin. Wochens.*, 1891, p. 1097.

The voice is somewhat weak and husky. On laryngoscopic examination there was found slight swelling and redness of the vocal cords, but the most noticeable feature was a *marked swelling in the inter-arytenoid fold, which assumed a corrugated aspect on phonation.*

The second case is somewhat similar, but of more value, because the patient remained under observation for a time, and thus a more careful record was obtained.

Mrs O., æt. 48, complained of aching pain in the throat at night, some cough, and expectoration of dark-coloured pellets. This state of matters had, at the time of examination, lasted for twelve months. The previous and family histories are unimportant, excepting that her mother died of cancer of the breast. The patient has had fourteen children. Her habits are good, as she never takes stimulants or smokes, nor does she indulge in highly-seasoned dishes. She is obliged to stand a good deal over the fire in cooking.

Two years ago patient thought she had a cold, as her voice was husky; but at times it was quite clear, more especially after she had expectorated what she describes as some little dark lumps. About twelve months ago she noticed that associated with the huskiness there was some difficulty in breathing at nights, but the dyspnœa was relieved when she expectorated. Ever since (*i.e.*, for twelve months) patient's voice has remained rather hoarse, but the degree of huskiness varies considerably. Patient also experiences some amount of soreness, referred to the region of the larynx, varying in amount, and coming on chiefly at night. Mrs O. is a well-developed woman, and rather stout. She suffers at times from severe indigestion and a disagreeable taste in the mouth. *Deglutition is sometimes* painful. The other systems are normal.

On laryngoscopic examination the vocal cords are seen to be slightly congested, and to be covered here and there with crusts of dry secretion. *In the inter-arytenoid space is seen an elevated rounded, greyish thickening, which, especially on phonation or approximation of the cords, appears to be divided into two by a cleft.* The diagnosis was laryngitis sicca and pachydermia, and the treatment consisted in the local application of iodine, the internal administration of potassium iodide, and latterly the employment of a spray of salt and water; but it cannot be said that so far the condition, either objective or subjective, has been materially influenced by these remedies. The accompanying sketch is a very fair representation of the laryngoscopic appearance (Fig. I.)

We have seen that some authors describe as pachydermia the localised inter-arytenoid tumour sometimes met with in phthisical patients; and we have further seen that these tumours, when microscopically examined, are found to be histologically similar to true pachydermia. I therefore give, by way of contrast, a drawing of such an inter-arytenoid neoplasm occurring in the otherwise normal larynx of a phthisical man of 35, whose right lung showed marked evidence of disease, and in whose expectoration bacilli were found (Fig. II.)

Before turning to the diagnosis of inter-arytenoid pachydermia, it may perhaps be desirable to call attention to the fact that both my patients who presented this condition were elderly women, so that they form a rather striking exception to the statements of German authorities, who believe that pachydermia occurs almost, if not quite, exclusively in males. In one of the patients there was a history pointing to the occasional use, at least, of ardent spirits. In the second there was every reason to believe that the woman was a total abstainer, and in her case I cannot help thinking that the irritation produced by the laryngitis sicca, and the constant hawking required to remove the inspissated secretion, were of importance with regard to the etiology of the inter-arytenoid thickening.

The diagnosis of pachydermia, when situated in the inter-arytenoid region, is not very difficult. It seems to me, however, very important that we should distinguish if possible between the condition as associated with phthisis and the—if I may be allowed the term—idiopathic variety. A localised tumour in this region is comparatively common in cases of phthisis; true idiopathic pachydermia is extremely rare. One might be inclined to think that the presence or absence of other evidences of phthisis would be sufficient to differentiate the two conditions, but this is not the case. In writing of these inter-arytenoid tumours as they occur in phthisis, Stoerk[1] says, "They are only of diagnostic value in the very first stage of tuberculosis, when, indeed, all signs of pulmonary disease are still absent, and when even the most experienced can find no trace of it. In such cases I believe the occurrence of a granulation-like tumour on the posterior wall of the larynx is an unfailing sign of developing tuberculosis." I must say that from my own experience I can corroborate Stoerk's statement, although one author[2] at least has described neoplasms similar in character to those usually found in phthisis as resulting from chronic nasal and naso-pharyngeal disease, and disappearing after its cure. I do not, however, think that others have observed a similar chain of events, and most authorities are undoubtedly at one with Stoerk. Occasionally an ulcer in the inter-arytenoid region has its upper margin much thickened, and from it may even arise a tumour-like

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[1] *Klinik der Krankheiten des Kehlkopfs*, p. 283.

[2] Tornwaldt, *Die Bedentung der Bursa Pharyngea*, p. 44.

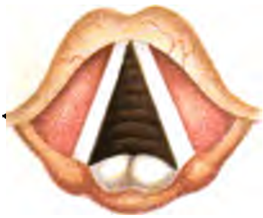

Fig. 1.

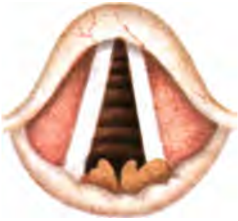

Fig. 2.

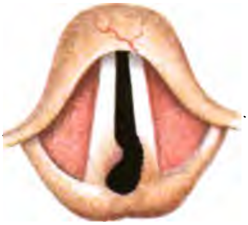

Fig 3.

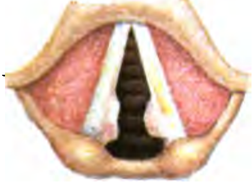

Fig. 4.

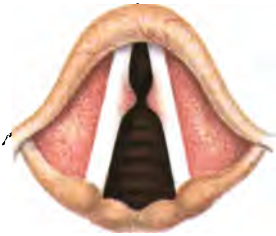

Fig. 5.

excrescence. Such ulcers may be tubercular or syphilitic—usually the former—but sometimes apparently depend upon the presence of both constitutional diseases.

From the above it will be seen that in the diagnosis of idiopathic inter-arytenoid pachydermia we have to exclude the localised tumour, which indicates tuberculosis, and the presence of an ulcer with a thickened upper margin. Practically these are the only two conditions which can give rise to a mistake, because the posterior wall of the larynx seems to enjoy a special immunity from neoplasms, both innocent and malignant, although of course it may become invaded by extension of cancer from adjacent parts. Ulceration can usually be detected by careful laryngoscopic examination, more especially if this be carried out by keeping the eye at a lower level than the patient's mouth, and inclining his head somewhat forward, for in this way the posterior wall is brought well into view, as shown by Killian. Further, it is usual to find evidences of lung mischief in the case of tubercular ulceration, and bacilli are usually present in the expectoration. In purely syphilitic cases we do not, as a rule, find definite granulations springing from the margin of the ulcer. It remains for us now to consider whether we can differentiate the localised inter-arytenoid tumour of phthisis from idiopathic pachydermia. We have seen that they are almost identical in microscopic structure, but still I believe that there are sufficient macroscopic differences to make a diagnosis by means of the laryngoscope possible. Of course, it goes without saying that a careful examination of the patient must be made in order to determine the presence or absence of phthisis; but in those cases where the inter-arytenoid tumour appears as the first evidence of a constitutional taint, we are driven to rely solely on the laryngoscope, and perhaps the age and habits of the patient. Pachydermia seems, as a general rule, to be most common in middle life and in those whose habits lead them to excesses in alcohol and tobacco, although my own cases hardly confirm this. In view of the fact that the only two typical cases of idiopathic inter-arytenoid pachydermia I have met with were in women, it is hardly possible to lay much stress on the sex. In laryngoscopic examination I would consider the following points of importance in arriving at a differential diagnosis:—

Idiopathic Pachydermia.	*Inter-arytenoid Tumour of Phthisis, or, if preferred, Phthisical Pachydermia.*
(1.) Swelling arises gradually, without any very definite margin so far as shape goes (although the colour is distinctly defined).	(1.) Swelling is distinctly a tumour, with more or less well-defined margin.
(2.) The colour is distinctly defined, being of a whitish grey with just a tinge of pink	(2.) The colour is usually red or pink.
(3.) The outline is smooth, or finely granular with sometimes a furrow or cleft.	(3.) The outline may be smooth or coarsely papillary.

The next case I propose to describe is one of pachydermia affecting chiefly the right vocal process.

G. H., æt. 42, consulted me first at the Royal Infirmary in summer of last year. He came as an out-patient at a busy time, so that no detailed account of his case was taken until November.

The family history presents nothing of importance. The patient is a most temperate man, rarely touching spirits; he does not smoke, but is exposed a good deal to draughts. His previous illnesses do not bear upon the present ailment, excepting an attack of influenza, which occurred in March, and to which patient attributes his present trouble. Hoarseness and loss of voice came on about a week after the patient resumed work. This gradually got worse, and the hoarseness increased, although there was no other symptom. In summer he was seen both by Dr Thin and myself. Unfortunately, I have no notes of the appearance of the larynx at this time, but Dr Thin has kindly supplied the deficiency, and describes the condition of the larynx at that time as follows:—"At the seat of the right processus vocalis was an oval swelling, with its long diameter (⅛th of an inch) parallel with the vocal cord. Its edge was slightly raised and reddish, while its surface was flat, and covered with a white mass of epithelium." After this, nitrate of silver, and then chloride of zinc in solution were applied to the larynx by Dr Thin, and thereafter—about three months ago—the voice began to improve. Now the patient has a very fair voice. There is no evidence of any disease, and the patient has never contracted any venereal ailment. *On laryngoscopic examination now there is found a localised reddish thickening near the extremity of the right vocal process. This thickening extends backwards along the vocal process. On phonation the tumour of the right side causes a corresponding indentation on the left cord, on which thickening is hardly, if at all, visible.* The accompanying illustration (Fig. III.) gives a very fair representation of the condition.

As we have seen in our survey of the literature, pachydermia of the vocal processes is usually symmetrical; further, the apex of one tumour usually sinks into a corresponding pit on the other during phonation, and traces of this depression are visible even during respiration. These two points alone usually serve as diagnostic signs. In the case just recorded, however, the thickening was confined to one vocal cord, and when first seen did not sink into a depression on the opposing side, even on phonation. I must say, therefore, that at first I was in some doubt as to whether the growth was innocent or malignant. Gradually, however, the voice improved, which it would not have done in a case of cancer, while the nodule became distinctly more localised, and now on phonation a distinct indentation is seen on the opposite cord.[1] There can, therefore, in my opinion, be no doubt as to the justification for the diagnosis of pachydermia.

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[1] About six weeks before this patient's last visit he was ordered a spray of salt water, and since that time a very marked further improvement has been noticed; indeed, a very definite diminution in the size of the nodule followed this treatment.

The following is a very typical case of pachydermia involving both vocal processes, and, indeed, presenting the typical appearances as described by German authors:—X., aged 50, a baker, noticed about four years ago that his voice was getting husky, but there were occasional remissions of the hoarseness until November last (the patient was seen in the end of January 1893); since that period, however, the voice has remained impaired. The patient has been a healthy man, excepting occasional tendency to bronchitis. His food has been plain, and he does not use highly-spiced articles of diet. When he drinks he does so to excess, but seems to remain weeks or months without touching alcohol. His habits in this respect have remained much the same for twenty years; during that time, too, he has smoked about 2 oz. of tobacco a week. There is no history of syphilis; he has had eleven children, and only one is dead. There is no evidence of pulmonary mischief.

There is some pain on deep pressure on the left side of the neck opposite the thyroid cartilage.

Laryngoscopic examination shows on the right vocal cord a long reddish swelling in the region of the vocal process, which is indented in the centre, where a yellowish patch is visible. On the opposite cord there is a small tumour, which on phonation seems to partly fit into the indentation on the right side, and partly to pass below it.

In this case there can, I think, be no doubt as to the diagnosis; indeed, the case is a typical one. The patient has been ordered a spray of 2 per cent. acetic acid, but of course too short a time has elapsed to enable any opinion to be formed as to its efficacy.[1]

My next case is somewhat interesting, as illustrating pachydermia occurring symmetrically on the anterior portions of the vocal cords. The patient, a gentleman of 59, was seen in consultation with Dr Adam of Elgin. His history was that thirty years ago he had become hoarse, and this lasted for eleven months. After this the voice remained quite clear until eighteen months ago. The patient is now (August 1892) quite aphonic.

Laryngoscopic examination was very difficult, owing partly to irritability of the fauces, but chiefly on account of an overhanging epiglottis. By dint of perseverance and by raising the epiglottis with a probe after spraying the throat with a solution of cocain, a good view was obtained. It was then seen that on each of the vocal cords, about the junction of the anterior third with the posterior two-thirds, was a tumour, the size and shape of which is fairly represented in the accompanying drawing (Fig. V.) This was, however, sketched under my supervision by an artist who drew from my description. The condition is, therefore, only approximately represented, and differs somewhat from the original. In the first place, no such perfect view was ever obtained for any appreciable time without raising the epiglottis with a probe, and hardly ever then; in the second place, the tumours were really of a somewhat greyish-red colour, and not so well defined in outline as those depicted in the sketch.

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[1] On his last visit the patient stated that he found the acetic acid very irritating; he was therefore ordered a spray of salt water. The condition had not been materially altered.

As before stated, the effect of these growths was complete aphonia. When touched with a probe and scraped with a curette they were found to be hard in consistence, and practically no impression could be made upon them in this way. Owing to their sessile character and the difficulty in using the laryngoscope, they could not be attacked with cutting forceps with any prospect of success, and really the only practicable method of endolaryngeal operation seemed to me to be by means of the electric cautery. At the same time, owing to the overhanging epiglottis, the difficulties in the way of accurately applying the platinum point were so considerable that, on the whole, removal of the tumours by thyrotomy seemed to me to afford the best chance of restoring the voice. Of course, against this method there was the objection that its performance would expose the patient to some danger. The matter was placed before him in this light, and he unhesitatingly preferred to have the electric cautery tried. By thoroughly cocainising the larynx, and by employing a suitably bent electric burner and using it to elevate the epiglottis, I was enabled to burn away the greater part of the tumours, only a small portion of that on the left cord remaining after five or six applications of the cautery. After the last burn was healed the patient was able to speak in a fairly good, although slightly rough voice. On the 16th November he writes: "The progress has been satisfactory; my voice gradually became softer and more natural, and often clear, if not quite strong."

This case is of very considerable interest, for several reasons. In the first place, the situation of the pachydermic excrescences was very unusual; indeed, as before stated, the only similar instance I have been able to find is that depicted by Krieg. The tumours occupied exactly the position in which the so-called singer's nodules are commonly found, and we have already seen that these are sometimes, if not always, similar in microscopic structure to pachydermia. The tumours, however, differed from them in size, colour, and outline. The singer's nodule is usually pale, differing little in colour from the vocal cord; its outline is smooth, and its size very minute. In all these respects the present case differed even more than is shown in the accompanying drawing. At the same time there is in this instance probably no sound reason for making any distinction between two conditions which are pathologically more or less identical. The second point of interest was the fact that owing to the size of the neoplasms the voice was completely lost and treatment urgently called for, and here it seems to me that the method adopted was, thyrotomy apart, the only possible therapeutic resource.

Some may be inclined to call in question the diagnosis in this case, but a little consideration will, I think, convince any one that every other condition could be excluded.

Before concluding, I have to express my thanks to Dr Bankart for his valuable assistance both in recording some of the cases and more especially in superintending the execution of the corresponding drawings.

IV.—CLINICAL LECTURE: ON A CASE OF ADDISON'S DISEASE.

By Alex. James, M.D., Physician to the Royal Infirmary.

A. C., aged 52, an upholsterer, born in and residing in Edinburgh, was admitted to Ward XXX. on January 27, 1893, complaining of great weakness and brown colouring of his skin.

History.—Family: father died of inflammation of the lungs at the age of 39, and from the patient's account this seems to have been acute pneumonia. Mother died at 83, and was always a strong, healthy woman. He has one sister only, and she is rather weakly, although evidently not phthisical. Patient is married, and has been the father of a family of seven, of which four are dead,—one at the age of 6 years, of water on the brain.

Habits as to Food and Drink.—He gives a strong alcoholic history, and states that he has also taken tea in excessive quantities.

General Surroundings.—At home he has only one room for himself and his family, and he says his house is damp. At work his surroundings are also unfavourable. He is much engaged making mattresses, and so is constantly in a very dusty atmosphere; this, he says, makes him cough, and causes his spit to become black for weeks at a time. His average day's work is nine hours.

Previous Illnesses.—Had measles when a child. He says he is very liable to catch cold, and that he always gets a cough when winter comes on. He gives no history of venereal disease.

Time, Mode of Origin, and Cause of Present Illness.—He states that he was feeling well enough, and was quite fit for work till three years ago. He then noticed that he was becoming weaker. He noticed, too, that he had a hard cough, and that he sweated a good deal, especially at night. Sometimes, when the cough was specially severe, he would spit up a little blood. He also noticed that he was losing flesh, and that if he sweated much his skin used to itch a great deal.

He kept on in this condition until five months ago, and then attention was attracted by his wife to a brown coloration at the back of his neck. This discoloration was uniform over an area about the size of the palm. It was not spotted, but a few days after this he noticed a number of spots on his chest. These gradually increased, and he next noticed the legs becoming coloured, and then the arms.

Since the discoloration began, he states that he has noticed himself becoming very much weaker; he has been troubled at times with pain across the loins, and his stomach has given him a good deal of trouble.

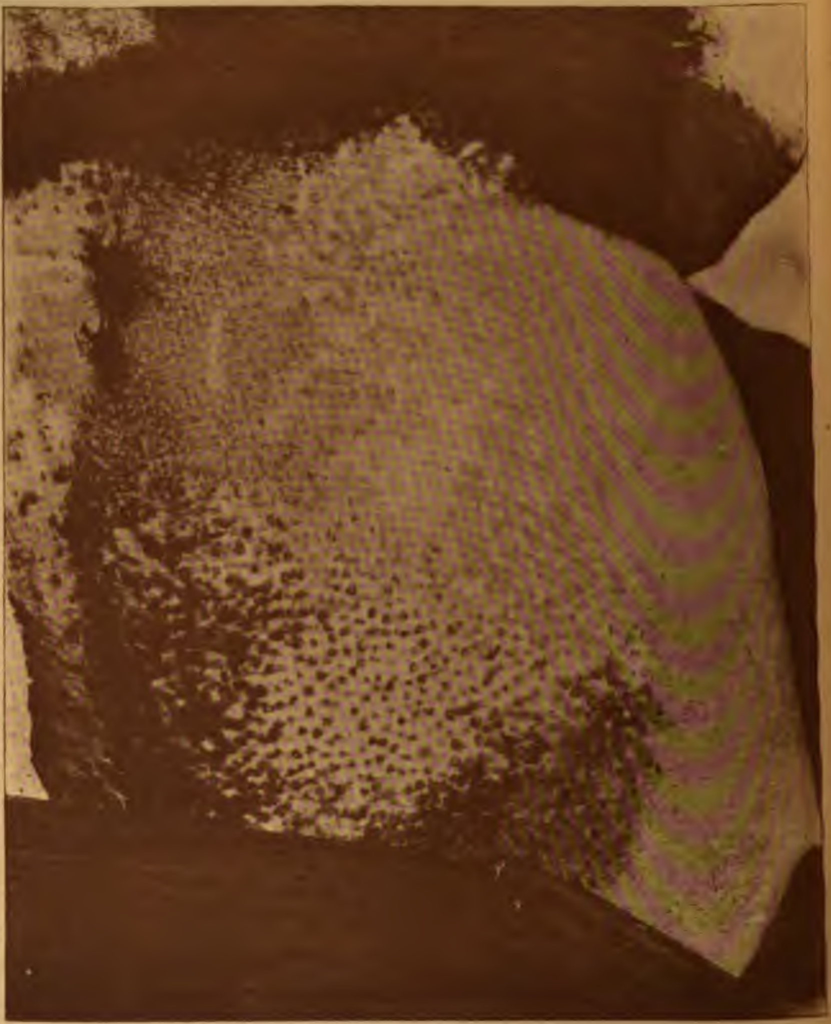
State on Admission.—Height, 5 ft. 7 in.; weight, 8 st. 1 lb., used to be 9½ st.; his muscles are flabby, and his face presents the appearances of anæmia.

Integumentary System.—When stripped, the brown discoloration of the skin can be seen widely distributed over the body and limbs. Over the neck, the greater part of the trunk, and the greater part of the limbs, the brown discoloration is fairly uniform, but at some parts, and notably the anterior abdominal wall, this is not the case; but its appearance is one of a multitude of spots, round in shape, and about ⅛ of an inch in diameter. These are much more numerous on the left side of the lower part of the abdomen, where they are arranged as if in regular rows right up to the middle line, where they abruptly cease. These spots can be made out very distinctly over the other parts of the trunk and limbs; but, of course, where they have become so numerous as to merge into one another, the appearance of the parts has changed.

If the spots are examined more carefully, they are in many cases seen to be ring-like,—that is to say, to present a dark-brown margin and a lighter-coloured centre. In many cases, too, their centre shows a hair, whilst in other cases the spots seem to encircle a sweat-gland. This latter point we have satisfied ourselves upon by examining them carefully after he has been sweating, for then many of them show, in their lighter-coloured centres, a raised and somewhat sodden appearance of the epidermis.

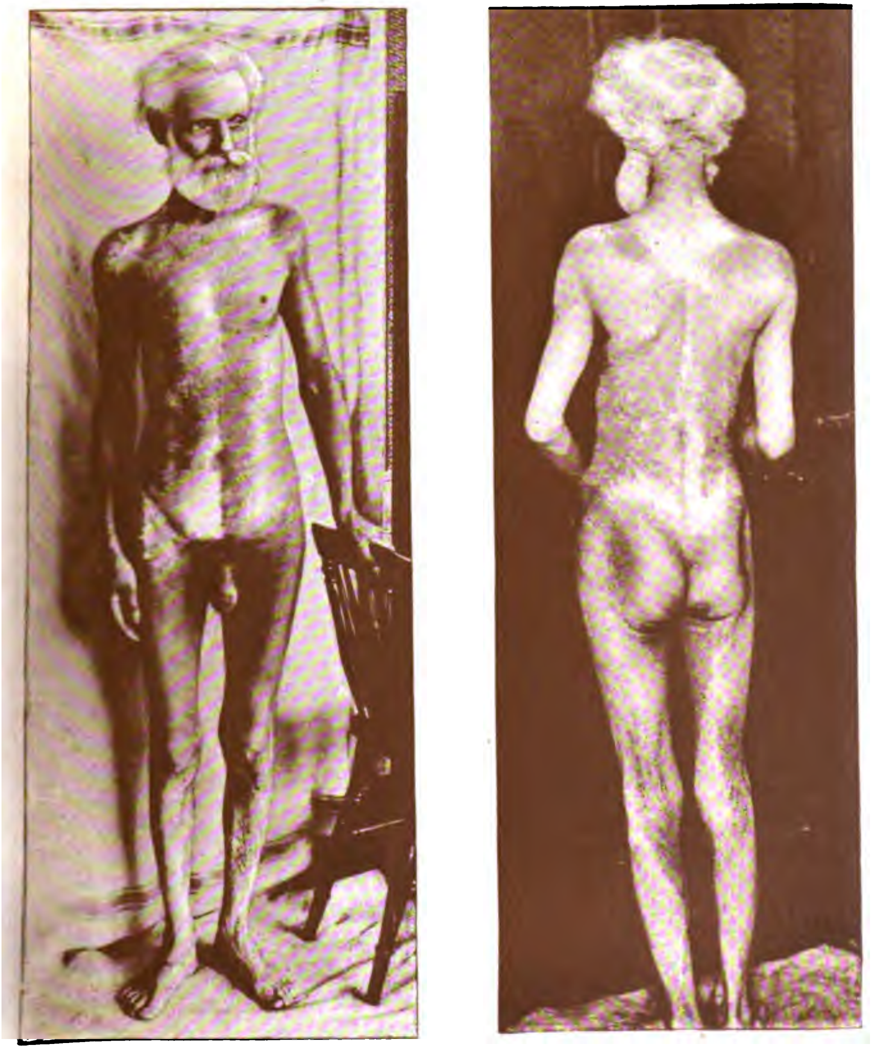
As previously stated, the face, though somewhat sallow, does not show the pigment; but the darkening is fairly well marked in the external genitals. The axillæ and the nipples cannot, however, be said to be more pigmented than the surrounding skin. Over the non-discoloured areas, specially of the abdomen, the skin appears to be—and in this we are corroborated by the patient's own statement—rather whiter than normal, and on each arm small spots, about half an inch or so in diameter, of leucoderma can be seen. The palms and soles show no pigmentation. Over the outer aspect of the left elbow-joint there is an area, oval in shape and about 1 inch in length, where the skin is slightly reddened and not pigmented. The patient tells us that the skin had been browned here; but that a few weeks before his admission he had knocked his elbow against a wall and skinned it at the part, and that when he took the scab away he had noticed it white.

The hair of the patient's head and beard is uniformly white, but he says that he began to turn grey at the age of 36 years. He



CASE OF ADDISON'S DISEASE.

Portion of the Anterior Abdominal Wall, showing at parts the arrangement of the spots in rows and their ring-like character.



CASE OF ADDISON'S DISEASE.

believes, however, that the marked whiteness has existed only for the last three years, — *i.e.*, since he has noticed his illness coming on.

On examining the hairs of the body, notably about the pubes, we noticed that on the left side, or wherever the pigmentary coloration of the skin is more marked, the hairs also seem to be more pigmented. This is not always the case, for though on close examination we observe that the hairs emerging from the centre of brown spots are more frequently brown than those emerging from a non-coloured area of skin, we find many brown spots giving origin to white hairs, and many pale areas of skin giving root to brown hairs.

The nails in our patient show, as is usual in Addison's disease, no discoloration; but they are markedly thickened, specially those of the thumbs, and index, middle, and ring fingers. The toe nails are apparently unchanged.

As regards the mucous membranes, the lips show patches of brown pigmentation, mostly along their line of contact; the hard palate shows also patches most markedly, and the inner surface of the cheeks to a less extent. The mucous membrane of the tongue does not appear to be affected.

Respiratory System.—With the history of cough, of night sweats, and of slight hæmoptysis, we carefully examined the chest, and found some impairment of the percussion-note at the left apex posteriorly, with slight harshening of the respiratory murmur, prolongation of the expiration, and increase in the vocal resonance. The at present scanty muco-purulent and rather frothy spit has been examined, but no bacilli have been found. It shows, however, curiously the pneumococcus.

Circulatory System.—When at rest he has no symptoms of circulatory disturbance, but if excited he is liable to palpitation, and though he never has fainted, he is apt to feel faint on making any sudden movement. Dyspnœa, also, he does not complain of, except as the result of exertion.

Physical examination shows the heart to be slightly enlarged (dilated), its left border being a little outside the nipple line. With the exception of a hæmic bruit at the apex, and a slight "bruit de diable" in the veins of the neck, there are no murmurs.

Pulse is 110 per minute, very soft and compressible, although regular, and the low tension is shown well by the sphygmographic tracings.

The blood when examined showed the red corpuscles to number 3,500,000 per cmm., and amount of hæmoglobin to be 45 per cent. Dr Muir has kindly examined some specimens of it for us, and his report is as follows:—

"The red corpuscles show considerable variations in size, many being undersized. There were also a few irregularly-shaped corpuscles. The corpuscles are pale, and form *rouleaux* somewhat imperfectly. The blood-plates are markedly increased in number.

The leucocytes are also somewhat increased, specially the large variety.

"The blood thus shows nothing characteristic, the changes being such as are generally met with in cachectic conditions."

Alimentary System.—His appetite is fairly good, and he is rather thirsty, but he has now,—*i.e.*, since his admission,—no vomiting. He used to suffer from vomiting and pyrosis. His bowels are usually confined; and he says that every fortnight or so he is apt for two or three days to be attacked with vomiting and diarrhœa. He says also that he sometimes takes a rather severe pain in the epigastrium.

Physical Examination reveals no enlargement of liver or spleen, nor any other abnormality.

Genito-Urinary System.—Urine: Quantity has varied between 36 and 80 oz., colour rather pale, reaction acid, specific gravity 1014 to 1020, no albumen nor sugar. On several occasions we have estimated the quantity of urea, but found no marked decrease. Neither have we found any increase of indican.

Hæmopoietic System.—Some slightly enlarged glands in the groins and axillæ can be detected.

Such, then, is our case. We have concluded that we are dealing with an example of Addison's disease, of a disease in which some morbid condition of the suprarenal capsules is the main lesion. But our patient presents some rather peculiar and very interesting features, which I wish now particularly to draw your attention to.

In the first place, as regards etiology. This disease is, of course, more frequent in men, but notice that our patient is rather older than the average. Next, as you will remember, the most frequent disease of the capsules in this malady is a tubercular one; it is interesting to note that although in his family history there seems to be no very marked phthisical tendency, he has had a cough and hæmoptysis. A point which has been adverted to by some of those who have written on the subject of Addison's disease is, indeed, that the disease is not more common in the phthisical.

Another factor in its etiology which has been instanced is injury to the back. In our patient we have, however, no evidence of this, but he has had to do hard physical work in unhealthy surroundings.

As regards symptomatology, the first point to which I wish to direct your attention is, that in our patient the one special symptom of the disease, viz., the debility, preceded the other, the bronzing of the skin. He tells us that he has been feeling weak and ill for some three years, whilst that the bronzing of the skin was not noticed till some four months ago. In the *Croonian Lectures* for 1875 Dr Greenhow states that the number of cases in which the bronzing is preceded by the debility and in which the debility is preceded by the bronzing are about equal, and cases seem also to have occurred where these two main symptoms were noticed to have occurred together.

The localities where the pigmentation shows itself is also important. As you are aware, it tends for the most part to affect first and most markedly the exposed parts—face, neck, and hands, and also those parts which normally contain most pigment, viz., the axillæ, nipples, umbilical region, external genitals. As you will see, this is not altogether the fact with our patient. Although he reports the coloration as having been seen first on the neck, you will see that it, with the face and hands, is not so dark as the trunk at many parts, and that though the external genitals are pigmented, the axillæ, nipples, and umbilical region are not specially so. As is usually the case, the palms of the hands are distinctly less coloured than the dorsal surfaces, and although the finger nails are thickened in the manner already described, we can see that their matrices are not discoloured.

Another point worthy of note is that abrasions of the skin may be followed by an excess of or by an absence of pigment. As you will remember, our patient has a small spot of a pale colour on his left elbow which has followed an abrasion, and he distinctly tells us that before he received this injury the skin was dark in colour.[1] It would seem as if the absence or excess of pigment depended on the depth of the injury. Where this has been deep the resulting scar will be white; where superficial, it will be much darker than the surrounding portions. Examples of the latter have been quoted following the application of a blister, and similar darkenings have been observed to follow the slight skin irritation caused by garters. A case very interesting from this point of view was reported by Mr Nicholson in 1872, of a baker lad who presented on his shoulders dark stripes, corresponding to the bands by which the basket he carried was slung at his back.

The transition from the darker to the lighter areas of skin is also to be noticed. As a rule it may be said that this is never abrupt, the darker merging gradually into the lighter apparently normal areas. An exception to this is met with, as is often the case, where there is leucoderma, as shown well in plate XI. of Addison's monograph, and the small spots of leucoderma on our patient show well a similarly abrupt margin. Still at many parts a merging of the dark into the normal coloured areas can be made out.

But now let me draw your attention to the peculiar spotted appearance which in our patient this discoloration presents. As already stated, he tells us that the first discoloration noticed was on the back of his neck, and that this was a large, uniformly diffused patch. Over the other parts of the body and limbs the pigmentation seems to have begun as spots rounded in shape, and by gradually becoming more numerous, merging into one another to produce a uniform browning. The occurrence of spots to some extent is not unusual in Addison's disease. In one of the plates (X.)

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[1] Since his admission we have noticed fresh brown spots appearing over this whitened area.

of Addison's monograph several such are figured, and Greenhow describes the "appearance of small, well-defined black specks, like black moles or freckles, on already discoloured portions of skin." It is evident, however, that the spots in our patient, many of them presenting the appearance of small rings with pale centres, are different altogether from what Addison has figured and Greenhow has described.

The arrangement of these spots, specially on the lower part of the left side of the abdomen, is very curious. As has been stated, some seem to be connected with hair follicles and others with sweat glands. Their curious distribution suggesting some nerve influence, we have tested the skin sensibility to touch, pricking, and temperature, comparing the spots with the surrounding skin, but have been unable to detect any difference.

As regards the mucous membranes, the appearances are the usual ones of Addison's disease. The conjunctivæ are white, the lips show pigmentation mostly at the line of contact of the one with the other, and the hard palate and inner surface of cheeks show several small dark-coloured areas.

As regards the epidermal appendages, the thickening of the thumb and finger nails has been already referred to, and we have already also referred to the tendency for the body hairs to be dark when emerging from a pigmented, and blanched when from a non-pigmented strat.

Further, the general symptoms,—the extreme debility and sense of weakness, the lumbar and epigastric pain, the dyspepsia and vomiting, the feeble and somewhat quickened pulse, all contrasting with the patient's showing no great emaciation and no great loss of subcutaneous tissue,—are just what we expected in such a case.

Since he has come in our patient has improved very much in condition, as the result probably of rest. He has gained weight (6 lbs.), he feels much better, and his pulse is now about 70, and of much better tension. In this connexion we have to remember that, although the disease is practically uniformly fatal (one case of recovery only is reported), remissions are frequent, and it may last for years. In these remissions the general health improves, and, what is more interesting, the skin-coloration lessens. I cannot help thinking that a lessening of the colour has occurred to a slight extent in this case.

As regards the modes of death in such cases. This is usually by asthenia, the mind remaining clear to the last in spite of the tremendous nervous prostration. Sometimes, when so very weak, a syncopal attack ends the scene, and in other cases death is preceded by coma. It is interesting to know that in one example of the latter mode of termination acetonuria was present, and it is important to remember that, like diabetes, this also is a disease which may be treacherous. Greenhow gives several examples of Addison's disease in which severe constitutional symptoms developed suddenly, and proved fatal in a few days.

The treatment of the disease is closely bound up in the pathology, so concerning this a few words are necessary.

As you are aware, this association of intense prostration and bronzing of the skin was shown first by Addison to be connected with disease of the supra-renal capsules. Since Addison's time much work has been done in connexion with the subject, although we still have a great deal to learn.

We know, however,—

(1.) That in this disease the pigment is deposited mainly in the cells of the rete, as is the case in the dark races of man, but that it may be found to some slight extent more deeply in the fibrous tissue of the cutis.

(2.) That although in patients suffering from cancer, tubercle, lymphoma, etc., and in whom the supra-renal capsules have been unaffected, areas of skin pigmentation are not infrequent, such cases are to be regarded as being altogether distinct from Addison's disease.

(3.) That it has been observed that with diseased capsules there may exist the extreme debility without the bronzing of the skin, as well as the extreme debility with the bronzing. Such instances have been explained on the theory that in the former set of cases the medullary part of the capsules, *i.e.*, the part which contains the nerve structures, is alone involved, whilst that in the latter set the cortical part, *i.e.*, the part concerned in pigment formation, is also diseased. In all the cases, further, in which prostration alone existed, it is reasonable enough to suppose that, had the patients lived long enough, bronzing might also have supervened.

(4.) That the semilunar ganglia are more or less involved in supra-renal capsule disease, and that they may have to do with the induction of the severe nerve symptoms.

We know, also, that the affection of the capsules is usually a tubercular one; that with other affections of these bodies, *e.g.*, cancer, pigmentation is not so frequent; but we know, too, that cases of Addison's disease have been seen where the capsules seemed to have undergone atrophy, where, as has indeed been stated, the capsules had undergone the same change as does the thyroid in myxœdema. In such cases we can conceive that the administration of the supra-renal capsule of a sheep or ox would be as efficient as is that of the thyroid of such an animal in myxœdema. If, on the other hand, there exists tubercular or other disease of the capsule, we cannot, of course, expect anything like so much.

Up till now our patient has been treated only by rest, diet, and tonics, and, as you see, there has been very considerable improvement.

V.—UTERINE ROTATION: ITS CLINICAL IMPORTANCE IN PREGNANCY AND LABOUR.

By JAMES HAIG FERGUSON, M.D., F.R.C.P.E., M.R.C.S., Lecturer on Midwifery and Diseases of Women, Edinburgh Medical School; Obstetric Physician, New Town Dispensary.

(*Read before the Obstetrical Society of Edinburgh on 11th January and 8th February* 1893.)

IT is nearly four years ago since I had the honour of reading a paper to this Society on a Variety of Post-Partum Shock, some cases of which had come under my notice.

I ascribed the occurrence of the shock to bruising of the ovaries during the application of the Credé method in the third stage of labour, and stated my belief that owing to the frequent occurrence of uterine rotation in pregnancy, the ovaries are so situated as to be not uncommonly in danger of injurious compression during the expression of the placenta, and that this compression might produce alarming reflex manifestations.

With increasing experience I have grown even more confident of the very frequent occurrence of this uterine rotation, in the third stage of labour especially. Its amount varies in degree in different patients, but in the vast proportion of cases its existence is distinctly to be observed, and its amount easily appreciated. For a record of my previous cases *vide Edinburgh Medical Journal*, July 1889. See also similar cases recorded by Graham, *British Medical Journal*, May 1891, and by Newell.

I propose to-night to adduce some additional facts in support of my contention, as in my former paper I did little more than relate the cases and briefly state the conclusions at which I had arrived.

During the last three years I have received many voluntary and unsolicited corroborations of the truth of what I then stated, from medical practitioners whose clinical experience tallied with my own.

Recently Dr Webster, from a study of post-mortem and frozen sections, has stated that frozen sections do not support the statement that the uterus is rotated, and he further states that the method of frozen sections is a sure method, implying that its results must be absolutely correct. Now, against this assertion I feel bound to enter a protest. I agree with Fritsch when he says that "The position of the female genital organs in a living woman can only be determined by the examination of a living woman, and that post-mortem sections, whether frozen or not, are never capable *by themselves* of giving a decision as to their position in the living subject." On the other hand, I quite admit that examination of the living subject is, of course, always liable to error, and one can never claim for it absolute accuracy, owing to the impossibility of getting directly at the uterus, and the varying degrees of skill of different examiners.

Of this, however, I am sure, that rotation of the uterus, especially in the third stage of labour and immediately post-partum, can be better observed clinically than after death; and owing to the special facilities existing then, one can claim for one's clinical examination a very fair degree of accuracy, perhaps greater than under any other circumstances.

Rotation is to a great extent a vital property of the uterus; it tends to disappear when muscular contraction ceases, and to become undone by post-mortem gravitation. The greater the muscular contraction and retraction, the more marked (*cæteris paribus*) is the rotation. Such vital processes are apt to be overlooked in the conclusions which are drawn from the examination of frozen sections alone, and consequently the results of patient anatomical work often lose much of their practical importance. Take as an illustration the position of the apex-beat of the heart. If one were guided by post-mortem evidence alone, one would be led considerably astray. One would imagine it to be produced, as Vierordt shows, by the tip of the right ventricle, and to be further from the middle line than it is; whereas, as a result of a movement of rotation occurring during each systole, the apex of the left ventricle comes to the front and impinges on the chest-wall at a spot nearer the middle line.

The minute and careful descriptions of post-mortem frozen sections are interesting enough in their way, and have no doubt done a great deal to open up and elucidate much that is of importance as regards the relationships of parts which are more or less rigid or incarcerated, and whose position is not much affected by death, and post-mortem changes, especially and notably,—for example, advanced pregnancy, the two first stages of labour, and certain cases of extra-uterine gestation.

They are, however, of no practical value whatever in alone determining the exact position of a freely movable organ, such as the body and fundus of the uterus, which even in life is affected by every movement of the body, and whose attitude, especially after labour, is to a great extent dependent on muscular vitality and tonicity. Especially does this hold good in the determination of the position of the unimpregnated uterus, the uterus in early pregnancy, and the uterus in the third stage of labour and post-partum. For in these circumstances the uterus is freely movable, not being unduly large, and consequently comparatively little influenced by outside pressure apart from the general abdominal pressure.

Webster found that in all his cases the walls of the uterus were bloodless, showing that strong muscular contraction had at one time existed. In frozen sections the post-partum uterus resembles a molluscous plastic mass, totally different to the impression it gives one clinically in the early puerperium of a firm, hard coherent body, with a definite shape and outline which can be easily recognised. The difference is simply that between life and death. The post-mortem uterus has lost none of its material constituents, but it has lost that subtle and mysterious thing called life, that which gave it form and vigour, and without which it is but a piece of inert matter dependent for its form and position on accidental circumstances. It is probable, however, that owing to the muscular degeneration and progressive absorption which takes place during involution, that uterine rotation becomes less distinct as the puerperium advances and muscular contraction ceases.

For these reasons I do not think we are justified in assuming that the position or relations of the puerperal uterus can be at all satisfactorily determined by post-mortem examination alone. The conclusions of such methods are certainly misleading, and are productive of no practical results.

I. POSITION OF THE UTERUS.

(*a.*) *Unimpregnated.*—It is now clearly established that the uterus, in addition to its inclination forwards, and its usual deviation to the right side, is rotated on its longitudinal axis in the vast majority of cases in such a way as to bring its left border forwards. This rotation, which occurs in the unimpregnated condition, and which has been described by Rouget, Claudius, Krause, His, Lusk, Spiegelberg, Martin, and others, becomes much more marked in the pregnant condition. According to Dohrn, Spiegelberg, and Olshausen, this rotation is caused mainly by the pressure of the rectum, during development, pressing on the left side. Pfannkuch quotes Thiersch, who says that Müller's ducts often lie obliquely or perpendicularly to one another in embryonic sheep, and Dohrn says that in sheep, cattle, and human embryos the left duct usually lies further forward than the right. Pfannkuch says, "The inclination of the fundus to the right with rotation of the left edge forwards is a position which has already shown itself in fœtal life, and as regards essentials is to be traced back to the first development of the fœtal intestines." Spiegelberg thinks the weight of the uterus in the right lateral posture (which is the commoner) is another potent cause.

(*b.*) *During pregnancy* the rotation to the right on the longitudinal axis becomes still more evident, and, according to Chaignot, Charpentier, and others, is more marked during the last month. Schroeder, Stratz, Freund, Olshausen, and E. Martin have established this beyond the possibility of a doubt, and Charpentier, Spiegelberg, Kölliker, Lusk, Rouget, Bayer, Küstner, Winter, Tarnier, Claudius, Croom, Krause, and others all describe this marked rotation. Depaul remarks that in a pregnant uterus "Rotation is a fact which has been confirmed by numerous necropsies." Croom has noted in many cases that in pregnancy the anterior surface of the uterus looks to the right, so that the transverse axis of the fundus is in the right oblique diameter of the pelvis. Schroeder and Stratz, in a frozen section made on the body of a woman in labour at the beginning of the first stage, describe the uterus as deviating so much from the symmetrical position that its left border was turned forwards and downwards, its right border backwards and upwards. Winter also describes a frozen section which he made, in which the pregnant uterus lay exactly in the middle line with its left edge forwards. In another section which he made the bowels were enormously distended with gas, and he did not look for rotation. Few observers seem to have done so.

In certain animals—the cow, for instance—this uterine rotation is greatly exaggerated. Sometimes it takes place to such an extent as to twist the vagina secondarily upon itself, and so create a serious source of dystocia (Auvard, Charpentier). Dolèris, quoted by Charpentier, has observed a case where rotation was so great in a pregnant woman that there were "phénomènes d'obstruction graves" during the labour. This was due to a semi-pathological condition associated with abnormal relaxation of the pelvic tissues. The rotation in this case, strangely enough, was to the left.

A great many causes have been adduced to account for this rotation.

Spiegelberg thinks it depends mainly on an inherited tendency, but that it is increased by the small depth the abdominal cavity offers in the middle line, owing to the prominent spinal column, as well as by the force of gravity in consequence of most pregnant women lying on their right side.

E. Martin says that often in Cæsàrean section, where lordosis was present, the uterus was so excessively rotated that its left border lay in the middle line anteriorly.

Schroeder and Stratz believe, from clinical observation as well as frozen sections, that this rotation of the uterus in pregnancy is due to the position of the child in utero. That side of the uterus which corresponds to the back of the child is always rotated forwards. They describe the breech as coming sideways out of the body of the uterus, the corresponding border of the uterus as turned forwards, and the corresponding ligamentum rotundum as being more tightly drawn, while the fundus sinks over to the opposite side. This they regard as the normal process. They further say, "If we regard the usual first position of the head, which is so frequent, we observe that while the ring of contraction moves upwards upon the child, the fundus inclines somewhat to the right, *i.e.*, to the side of the abdomen of the child. This is easy to recognise by the stronger tension of the left round ligament, because it is inserted higher than the right one. The left round ligament is clearly to be felt somewhat to the left of the median line, while the right is only to be felt sideways with difficulty."

In observations of 120 head positions, they found that in 102 the ligamentum rotundum, which corresponded to the back of the child, was rotated forwards. In other 15 cases it turned forwards after the emptying of the bladder, and only in three cases was the tension of the round ligaments the same on both sides, and in these three cases the breech went straight out forwards, while the fundus sank backwards. In no single case could they observe that the round ligament corresponding to the abdomen of the child lay forwards.

I cannot agree with Schroeder and Stratz in ascribing the rotation of the uterus to the position of the fœtus in utero. I am inclined to agree with Spiegelberg's views so far, but I think there are other causes which deserve to be brought forward.

The first is the traction exercised by the round ligaments. An important point to be remembered (which has been pointed out by Joulin, Depaul, Tarnier, and Chantreuil) is that the insertions of the round ligaments and of the tubes are found on the fully pregnant uterus nearly at the union of the anterior third with the posterior thirds of the organ. Stoltz has found that the round ligaments are quadrupled in size during pregnancy, and he finds that the right round ligament is shorter and thicker than the left. Schroeder and Stratz have proved that the left round ligament is inserted higher on the uterus than the right, and is therefore more tensely stretched. Homburger finds the left ligamentum rotundum usually more distinct and larger than the right, and that the right one is only to be felt rarely when the uterus is rotated to the left. The more tensely stretched left round ligament will thus tend to increase rotation by pulling the left border of the uterus forwards.

Another cause is one which I believe acts chiefly in the early months of pregnancy, and that is the asymmetry of the bladder when it is distended. The full bladder bulges to the right side; it will thus push back the right border of the uterus, and the loaded rectum will push forward the left border. These latter influences, as I have said, can only act on the pregnant uterus while it is yet a pelvic organ, but at any rate they will help to give it a "set" in the direction I have indicated. When Resident Physician in the Royal Maternity Hospital here, I conducted a series of twenty observations on distended bladders in pregnancy, and found that in every case a flexible bougie introduced into the bladder passed distinctly to the right side, thus proving that the greatest distention of the bladder was in that direction.

Yet another cause of the rotation of the pregnant uterus is one which I consider to be a most potent one, and it is to be looked for in the disposition and arrangement of the middle layer of the muscular fibres of the uterus. I would call this an intrinsic cause of rotation as opposed to the extrinsic causes just considered. These muscular fibres run obliquely in all directions, and it is impossible to conceive that their influence can be equal on both sides. The uterus in this respect may be compared to the heart. The heart is fixed at its base at its junction with the aorta, and at every ventricular systole it rotates on its longitudinal axis to the right, so that the left ventricle comes more forward. The uterus is likewise fixed partly by the ligaments in the pelvic cavity, and partly by its insertion into the vagina. The fundus would correspond to the apex of the heart. As the muscular fibres develop in pregnancy, they in all probability tend to increase the rotation to the right, by being brought into play *actively* in the intermittent uterine contractions which are known to exist all through pregnancy; and *passively*, owing to the stretching which the uterine walls then undergo through the development of the fœtus. To illustrate the effects of distention: take a fresh bladder, fix it below, and distend it moderately with water; we shall find that the bladder rotates on its longitudinal axis, and the greater the distention up to a certain point the more marked will be the rotation. The same thing occurs in the uterus when its walls become distended by the rapid growth of its contents during pregnancy, the oblique muscular fibres being stretched and passively helping to increase the rotation of the organ. I have only assumed so far that the arrangement of the muscular fibres in the uterus is such as to bring this about; but Auvard confirms the truth of my assumption, as he has shown that the development of the uterus is rarely perfectly symmetrical. He has shown, in following the development of the pregnant uterus, that the symmetrical development of the two halves of the organ produced a uterus which seemed median, while the asymmetrical development seemed to give a right or left inclination, as the case may be. The right development is by far the most common, and any real deviation is simply secondary to that due to greater development.

The anterior surface of the uterus is usually inclined towards the side on which the organ is most developed. In this way the more voluminous horn seems to draw after it the corresponding side of the gestating organ back towards the vertebral column, withdrawing the broad ligament from the same side of the abdominal wall, and acting conversely on the other broad ligament. This explains clearly why rotation becomes more marked during labour and in the early puerperium, the muscular fibres being then in a state of great activity.

The unequal development of different parts of the uterus in pregnancy is further confirmed by Joulin, who says that the increase during the first months is chiefly in the direction of the transverse and antero-posterior diameters, and by Tarnier and Chantreuil, who state that the fundus of the organ increases considerably during the first six months, and the lateral parts follow this increase unequally. The inferior part develops chiefly during the three last months, and is usually more dilated anteriorly than posteriorly, the posterior part of the body being that which develops most in the upper two-thirds.

Frequency of Right Lateral Rotation of the Uterus, and its Relation to the Position of the Child.

Instead of ascribing the rotation of the uterus to the position of the child, as do Schroeder and Stratz, I believe with Lusk, Spiegelberg, and E. Martin, that the position of the child is probably influenced by the rotation of the uterus. Bayer is of opinion that owing to the traction exercised by, and the kind of hypertrophy of, the muscular fibres, the shape and appearance of the uterus are much influenced in the later months of pregnancy by the growth of the fœtus. This can only be so, however, in the later months.

I am far from doubting the accuracy of Schroeder's and Stratz's observations, for I am convinced that they correctly represent the usual state of matters. In their theory as to the production of the rotation, however, they confound cause with effect; for it is not the position of the fœtus in utero which causes the rotation, but it is the rotation which to a great extent influences the position. It is possible that the fœtus during the last month of pregnancy may help by its position to increase the already existing rotation, and so make it more marked. We are able, therefore, to ascertain approximately the frequency of the occurrence of right lateral rotation of the uterus by considering the position of the child, which is so much influenced by the rotation. We argue from the effect caused to the cause itself. If we allow that the position of the child is caused by the rotation, then the demonstration of the frequency of the occurrence of the position will give the frequency of occurrence of the rotation. When the uterus is rotated on its longitudinal axis to the right, the transverse axis of the uterus lies diagonally in the pelvis in the right oblique diameter. This to a great extent accounts for the fact that in cranial presentations (which constitute fully 95 per cent. of all labours) the vertex of the fœtal head lies, in 99 per cent., in the right oblique diameter of the pelvis. According to Spiegelberg, the back of the child in vertex presentations is directed to the left and forwards in 70 per cent. of cases, and to the right in 30 per cent. When it is directed to the right it is most usually inclined backwards. Although Schroeder and Stratz argue erroneously from their premisses, and confound cause with effect, yet their statistics are sufficiently reliable to be accepted with confidence. They found that out of 120 head presentations which they examined, the uterus was rotated in 117,—in other words, in 97·6 per cent. They do not definitely state whether rotation was right or left, but say that the border of the uterus corresponding to the fœtal back was always turned forwards. Counting only (by general statistics) those cases where the back was forward and to the left, this would give 84 left occipito-anterior positions out of those 120 cases as the very lowest computation,—in other words, Spiegelberg's 70 per cent. But from my own observations I am distinctly of opinion that right lateral rotation of the uterus also occurs in right occipito-posterior positions, though perhaps not quite so constantly as in left occipito-anterior cases. Such being the case, the percentage of cases of right lateral rotation in vertex presentations alone would in all probability be nearer 90 than 70.

Chaignot has carefully investigated thirty cases, with the following results:—

21 were O.L.A. with right rotation = 70 per cent.
1 was O.L.A. with no rotation = 3·4 „
3 were O.D.P. with right rotation = 10 „
3 were O.D.P. with left rotation = 10 „
2 were O.D.P. with no rotation = 6·6 „

That is to say, in 80 per cent. there was distinct right rotation, in 10 per cent. there was left rotation, and in 10 per cent. there was no appreciable rotation at all.

There were 22 primary O.L.A. cases = 73·4 per cent.
There were 8 primary O.D.P. cases = 26·6 „

The vertex lay in the right oblique diameter of the pelvis in every case to begin with; one changed to O.L.P. at the beginning of labour. Chaignot's cases will be more fully considered afterwards.

We are, I think, therefore justified in concluding from the foregoing statements that in vertex cases the uterus is rotated to the right on its longitudinal axis in at least 80 per cent. of cases, probably more. Breech and face cases also present most commonly in the right oblique diameter of the pelvis, and from this circumstance we may in like manner reasonably conclude that the transverse axis of the uterus in the majority of these presentations also occupies the right oblique diameter of the pelvis.

I have on two occasions been able to verify these statements at post-mortem examinations. In both cases the long axis of the vertex was lying in the right oblique diameter of the pelvis, and the fœtal back lay forwards and to the left. Both uteri were distinctly rotated to the right, and their left borders came forward.

Charpentier says that rotation of the uterus to the right always occurs in pregnancy, and agrees with Spiegelberg in stating that the position of the fœtal head, face, and breech depends upon the conformity of the uterus to the pelvis. Tarnier and Chantreuil also coincide in this opinion.

(*To be continued.*)

VI.—A CASE OF BLEEDING BY THE URACHUS.

By W. RAMSAY SMITH, M.B., C.M., B.Sc. Edinburgh.

(*Read before the Obstetrical Society of Edinburgh, 12th December* 1892.)

THIS case, which is of considerable importance clinically and is of much interest embryologically, came under my care while I was acting as substitute for Dr Simson Fowler, Juniper Green. By Dr Fowler's courtesy I am able to report it.

The history of the case, so far as I have been able to make it out—for it was only after the case had assumed a somewhat serious aspect that I was informed of it—is as follows:—The subject, a female infant, was born on the afternoon of August 3rd. Although the labour was complicated by a flat pelvis and typical pendulous belly, and the membranes were ruptured beforehand by a diligent if somewhat officious midwife, and the presentation could not be made out until the mother was under chloroform, yet, thanks to Dr Haultain's skilful assistance and the application of forceps at the brim, the labour was completed within a very short period of time, and the infant showed no signs whatever of a tedious labour. The cord was perfectly normal in appearance.

On the second night after the birth, August 5th, there was "a large quantity" of bright red blood on the infant's binder. It appeared on that night only, and the nurse noticed that it was coming not from the cord, but from the navel at the side of the cord.

Two days after this, on August 7th, the child had an attack of diarrhœa, and there was a good deal of blood in the motions on the napkins. It was observed, however, that this blood was coming from the urethra. When I was informed of this, I asked the nurse to pay particular attention to the source of the blood and the circumstances of the bleeding. On August 8th the bleeding was reported to be "very bad"; about two teaspoonfuls might come at a time; the blood always appeared at the same time as the bowels moved; it was of a bright red colour, and invariably came from the urethra. Examination of the vulva showed that all the external parts were normal; there was no sign of inflammation or irritation of any sort. The bleeding decreased as the diarrhœa abated, and it ceased entirely on August 9th. On that day too, six days after birth, the cord came away.

Considering the relation of the umbilical cord to the umbilical arteries and the urachus, and considering that the arteries and urachus do not close, even in normal cases, till from two to five or seven days, I believe there can be little doubt but that bleeding took place from the patent hypogastric arteries,[1] at first through the umbilicus, and later, when that outlet had closed up, through the urachus into the bladder. One can easily understand how hæmorrhage should occur coincidently with or immediately subsequent to the moving of the bowels, only a small quantity of blood appearing in the urine.

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[1] There is a possibility that it might have occurred from the umbilical vein, but I believe this is unlikely.

I ought to state, in order to make the record of the case as complete as possible, that the infant was strongly suspected by the mother to be "over time" by about three weeks. The development of the infant—it weighed nine pounds—gave an air of probability to the mother's suspicion. The presentation was cephalic; the position was O.R.P.

This case, as I have said, is of considerable clinical importance. No ordinary text-book of surgery or of diseases of children, so far as I am aware, makes any reference to the urachus as a possible source of, or a highway for, blood; and bleeding by way of the urachus has to be added to the possible causes of hæmaturia. As to whether this is an instance of an extremely rare type of case I am quite at a loss to say; but I suspect that if blood were found in considerable quantity on an infant's nursery napkin it would naturally, and without hesitation, be regarded as coming from the bowels, not from the bladder, and especially so if there were coincident diarrhœa.

VII.—THE LOUISIANA MARITIME SYSTEM OF SANITATION.

By W. F. MACARTHUR, M.B., C.M. Edin., Surgeon, Anchor Line.

WHILE acting as surgeon on an emigrant steamer between Palermo and New Orleans, I had an opportunity of seeing the above method tried.

When the vessel entered the Mississippi, the crew and passengers were inspected by Dr J. N. Thomas, Chief Quarantine Inspector, and if any infectious cases had been on board, they would have been removed to the Quarantine Hospital. The vessel was then sent a few miles up the river to the Quarantine Station, which is situated 95 miles from New Orleans, where the passengers and crew, with their clothing, bedding, and the ship's napery, carpets, etc., were landed on a wharf, the textile fabrics being hung upon frames, which are slid into large cylinders 60 feet long, with a diameter of 15 feet, and with a perforated pipe running along its floor, and a galvanized tube, 2 inches in diameter, coiled round the interior. The cylinder is now closed, and steam at a temperature of 180° F. is passed through the perforated pipe for twenty minutes at a pressure of 7 lbs. to the sq. in. It is then shut off and turned into the coiled tube for twenty minutes, a dry heat of 220° F. being obtained. The cylinder is now opened, each person putting on their disinfected clothes, and sending those taken off to undergo the same process. Trunks, hats, umbrellas, etc., are irrigated with 1-500 solution of perchloride of mercury. To disinfect the ship, a small steamer is brought alongside, fitted with vacuum fans, by means of which the air in the steerages is pumped out, and air containing 11 per cent. of SO_2 forced in. The hatches are battened down for twenty-four hours, and the deck washed down with perchloride solution. The time occupied in this process was, in our case, two or three days, there being over 900 persons on board. After the disinfection is over, the vessel anchors in mid-stream for three days, when passengers and crew are re-inspected, and if no infectious cases are found, the vessel is allowed to proceed; should any exist, they are removed to the Quarantine Hospital, and the vessel is refumigated. In the year 1878, when there was an epidemic of yellow fever in New Orleans, the disease having been brought to the city by a vessel, quarantine regulations were put in force, and disinfection by Holt's system (which consisted merely of irrigation with perchloride of mercury) started. Since then no cases of yellow fever have occurred, although many have arrived at the Quarantine Station. The present process does absolutely no damage to clothing, —starched shirts, etc., coming out quite stiff. The great objection to the present Quarantine Station is its position in a very low-lying, swampy, and malarious part of the country; and as the emigrants are put ashore till the completion of the process, and have to lie all night on the open wharf without any shelter, excepting a temporary arrangement for the women and children, they are thus exposed to the malarial miasma (there were several cases of malaria amongst our passengers), and to the exceedingly variable weather which prevails in Louisiana.

Part Second.

REVIEWS.

The Diseases and Deformities of the Fœtus: an Attempt towards a System of Ante-natal Pathology. By J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S.E., Lecturer on Diseases of Infancy and Childhood, Minto House School of Medicine, Edinburgh, etc. Vol. I. Edinburgh: Oliver & Boyd: 1892.

THIS is the first volume of what promises to be a very large work, and one which is calculated to fill a distinct want in medical literature. There can be no doubt that in the very imperfectly explored territory of intra-uterine disease we have to look for the clue to many interesting pathological problems. We are therefore prepared to welcome any writer who attempts to bring some light and order into the confused mass of facts which have accumulated in this direction. Dr Ballantyne's large experience in fœtal pathology, and his very wide reading, specially fit him for this somewhat formidable undertaking; and when we find him (p. 12) looking forward to the time when, as a result of the study of intra-uterine pathology, we shall have "a system of ante-natal therapeutics" which will "abolish fœtal disease altogether," we recognise that he is also equipped with the requisite enthusiasm.

The first two chapters treat of the Study of Fœtal Pathology, its scope, its importance, the reason so little is known about it, and the best methods of investigation and case-taking. In connexion with the last-named subject, we would take exception to the preference which the author expresses for "a good water-colour sketch" over a photograph. Many of his own illustrations are good, but the outlines of some of them would have been much more satisfactory, and they would all have been of greater value, had they been taken from photographs.

Chapters III. to VII. give an account of the writings on fœtal life and its diseases from the earliest times to the present day. They evidence a large amount of reading, and contain a great deal of most curious and interesting information. The next chapter is rather a dry one, on the Classification of the Diseases of the Fœtus.

The ninth chapter is that to which most readers will be inclined to turn as the most interesting in the book. It deals with the General Characters of Fœtal Diseases, and discusses such subjects as intra-uterine immunity, "potential morbidity," and "potential mortality" of the fœtus, the uterus as a forcing-house for some diseases, and diseases peculiar to the fœtus. It contains much that is interesting and suggestive, but is disappointingly short compared to some other sections of the book.

The remainder of the volume is taken up with a very full consideration of General Dropsy and General Cystic Elephantiasis, and various combinations of these conditions. There is a stupendous list of authorities, and an excellent index.

We cordially recommend Dr Ballantyne's work as one which will prove of real value as well as interest to future workers in various branches of pathology and medicine, and one which is a credit not only to the author, but also to the Medical School to which he belongs.

La Pratique Gynécologique et Obstétricale des Hôpitaux de Paris. By PAUL LEFERT. Paris: J. B. Baillière et Fils: 1893.

THIS work is what its title represents it to be: a guide to the practice of the best known Parisian obstetricians and gynæcologists. The subjects are arranged alphabetically, and with regard to each the opinions of two or more authorities are quoted. Auvard, Bouilly, Budin, Charpentier, Doléris, Pinard, Pozzi, Tarnier, and Terrillon are, as might be expected, those from whom most information is derived. The work, although best suited for the use of busy French practitioners, may also be consulted with profit by British obstetricians and gynecologists. Upon some subjects, such as hypnotism during labour, the advice given is distinctly Parisian, and upon others, such as pruritus vulvæ, it is somewhat imperfect; but taken as a whole the book is full of useful hints. It is of a handy size, and can easily be carried in the pocket.

A Treatise on Gynæcology, Clinical and Operative. By S. POZZI, Professor in the Faculty of Medicine, Paris. Vol. I. London: The New Sydenham Society: 1892.

THE New Sydenham Society has conferred a benefit upon British medical men by bringing out a translation of Pozzi's well-known work on Gynæcology. The labour of rendering the work into English has been entrusted to several different hands, but the bulk of it has been done by Dr Lazarus Barlow and Mr Leonard Mark, and, so far as we have been able to test it, has been well carried out. This volume contains four sections of the original work. The first is devoted to such general matters as antisepsis, anæsthesia, the arrest of bleeding, and drainage; the second to the gynæcological examination; the third to metritis; and the fourth consisting of over 150 pages, to fibromata of the uterus. The text is greatly elucidated by the numerous illustrations. The teaching on such subjects as the use of the sound, the bimanual examination, the dilatation of the cervix, etc., is quite abreast with the times; but we question whether British and American gynæcologists will be inclined to admit the priority claim which Pozzi makes for his own country with regard to the use of the "bimanual" and of specula like that of Marion Sims. No doubt, instruments like the Sims' have been previously in use, but the special point emphasized by the American gynæcologist was the position of the patient, not the kind of speculum. These, however, are small matters. The work is one of great merit, and is well worthy of a place in the New Sydenham collection of standard treatises.

The Diagnosis of Diseases of the Nervous System: A Manual for Students and Practitioners. By CHRISTIAN A. HERTER, M.D., Physician to the Class of Nervous Diseases, Presbyterian Hospital Dispensary. New York and London: G. P. Putnam's Sons: 1892.

WE do not know if there is a need at present of new elementary works on the nervous system. If there is, this volume will supply the want. It is, of course, impossible in a small book such as this to give many details, but we must commend the author on the arrangement of his work. He has taken the correct line, we are sure, for teaching students the coherence of nervous symptoms with lesions. Instead of explaining *seriatim* the symptoms of each particular malady, he groups together the effects of different lesions, and then, in speaking of the separate diseases afterwards, deduces from the part of the system involved all the symptoms which must necessarily follow. In fact, the book is more an aid to diagnosis of nervous diseases than anything else, and no mention of treatment is made throughout. We have no fault to find with the subject-matter as a whole. More stress might certainly have been laid on the "trophic realms," including Hughlings-Jackson's higher one. The account of peripheral neuritis is perhaps not so clear as it might be, but this does not detract from the value of the book to a student seeking for rapid and reliable aid to diagnosis.

La Pathologie des Émotions; études physiologiques et cliniques. Par CH. FÉRÉ. Paris: Felix Alcan: 1892.

THIS is a learned work, without any appearance of pedantry. The author has laid all times and all countries under contribution, and the result of his labour is not a compilation, but a body of facts well arranged, and of theories clearly expressed and ably criticized. The book deals not only with the emotions, but with the mind as a whole, and with all physical causes that affect it in any way. The author has a clear understanding of his subject, and has the psychological training necessary for dealing with it, which is more than can be said of many writers on medical psychology or psychological medicine. After an extensive review of the phenomena of normal sensation and emotion, he goes on to consider what may be termed morbid or abnormal emotions, and all their causes and their physical signs or manifestations in the various systems of the body. Every form of mental disease, or of disease associated with special mental phenomena, is passed in review. A chapter is devoted to the various theories of the organs associated with the emotions, and the book closes with a chapter on medical treatment, and another on legislation. The work throughout is illustrated by clinical cases from the author's practice, and its value is greatly enhanced by numerous references, a very complete summary of contents, and copious indices. The burden of the book is briefly recorded in the closing paragraph, which may be freely rendered thus:—"Toland wants a new religion on philosophical lines, whose creed should be truth, liberty, and health; if a new creed were really necessary, public health would be the subject of it. To be a nation of good animals, says Spencer, is the first condition of national prosperity."

The Antiseptic Treatment of Typhoid Fever. By A. M. ANDERSON, M.D., L.R.C.S. Ed., Medical Officer of Health, Dundee. Dundee: John Leng & Co.: 1892.

DR ANDERSON has made such haste to publish the results of his treatment of enteric fever by large doses of salol that he has forgotten to ascertain whether any other practitioner has hitherto been curious enough to test the effect of the drug on that still too common disease. In fact, he leads his readers to believe that no one ever tried such a thing before. What about Egasse (*Bulletin Général de Thérapeutique*, Sept. 30, 1891), Cahall (*Med. News*, Philadelphia, 1890), Dujardin Beaumetz, Jaccoud, and others? In their hands 2½ to 3 grains of the drug every two hours has sometimes succeeded, sometimes failed. Dujardin Beaumetz, indeed, recommended larger doses, but at considerable intervals. Fussel (*Bulletin de Thérapie*, July 8, 1892) found the diarrhœa checked, but the fever was not shortened. Other references to this subject are,—Lépine (*Lyon Médical*, 1886); Herlich (*Deut. Med. Wochenschrift*, 1887); Georgi (*Ber. Klinische Wochenschrift*, 1887). While Bouchardt insists that an intestinal antiseptic must be insoluble and exert no toxic action on the organism.—This appears to exclude salol.

Our author narrates ten cases treated expectantly, of whom three died. These cases, although not picked for their severity, did not follow one another chronologically, but were chosen to show a variety of symptoms. Then he describes the clinical histories of twelve patients, with two deaths, treated by large doses of salol. The numbers are far too small to found any averages on, and any arguments used must be based upon the clinical symptoms.

The doses given are as follows:—10 grains of salol, with a little chlorodyne and bismuth, to adults, 5 grains to patients from 6 to 14, 2½ grains to younger children, every two hours. The most noticeable result in most cases is to check the number of stools and their fœtor. This, we admit, is very marked, but it is doubtful if it is of unmixed benefit for a case of typhoid fever to go for a week, as some of them did, with only one movement of the bowels. The danger of absorption from the gut, and of perforation from the irritation of scybala, we imagine, must be increased, although the weakening effect of fluid discharges will be partly counteracted. In some cases, however, the salol did not check the diarrhœa.

So much for the obvious advantages of the salol treatment, for in the two cases only in which the temperature fell before the fourteenth day the nature of the disease present was very doubtful, and was as likely pneumonia as typhoid fever; and in one of these, too, the salol was only given after the temperature had fallen by crisis on the evening of the tenth day. This patient had no stool for seven days consecutively.

For its drawbacks we may point out that in seven of the cases it appears that symptoms of poisoning occurred. The patients vomit greenish matter, are constantly delirious, and have rigors even in the stage of defervescence. For instance, patient No. 6 was in hospital for two days before the antiseptic treatment was commenced; on the day during which the drug was commenced, although the temperature fell a few points at the beginning, delirium set in and persisted for three days. Another point worth drawing attention to is the extraordinary number of respiratory complications in these twelve cases: one had acute pleurisy, one acute bronchitis, four developed pneumonia, although two of these were possibly cases of pneumonia to begin with.

These records cannot be considered satisfactory, nor does the action of the drug appear so successful as the quinine and chlorine water of Burney Yeo. Osler, in his recent book on the Practice of Medicine—and if any one can learn from experience of this disease American practitioners should be able to—does not speak at all highly of the antiseptic treatment of typhoid fever. The "cold-water cure" seems from all accounts to be more efficacious in checking both the diarrhœa and the fever.

Dr Anderson deserves credit for persevering with his salol, and we hope that when he publishes his next list of cases the doses given will not be so large, and the results more uniform.

Notes on the Malarial Fevers met with on the River Niger. By W. H. Crosse. London: Simpkin, Marshall, Hamilton, Kent, & Co.: 1892.

Dr Crosse has published a useful little book for the benefit of medical men proceeding to the West Coast of Africa. He does not profess to give an exhaustive account of malarial fevers, but he brings into prominence special points of prophylaxis and treatment, which are of great value to practitioners in the region he refers to. The author believes that the so-called "Blackwater fever" is a severe form of malarial fever, usually of the remittent type, and he asserts that one attack predisposes to another, and recommends that after an attack a return to a non-malarious climate is advisable. It is a remarkable fact that "Blackwater fever" hardly ever attacks old coasters if they do not suffer from it within two or three years of their first visit to West Africa, and it very rarely attacks a man during his first year of residence. It is those suffering from malarial cachexia who are prone to suffer from this complication.

The treatment both of malarial fever and its complications given in this book is up to date. The cases given are interesting, and the hints on personal hygiene are valuable.

With regard to the prophylactic administration of quinine for malaria, the author advises six grains of the drug every third day, thinking it a better plan than giving a smaller dose every day.

A Handbook of Pathological Anatomy and Histology, with an Introductory Section on Post-mortem Examinations. By F. Delafield, M.D., and J. Mitchell Prudden, M.D. Fourth Edition. New York: Wm. Wood & Co.: 1892.

A book which has reached a fourth edition may be safely regarded as, to a large extent, beyond the pale of criticism. Therefore, in again recommending Drs Delafield and Prudden's valuable work, we need do little more than refer to its more salient features.

Any text-book which gives in some 700 pages an account of the more leading facts of Pathology must necessarily omit reference to much that is important. Yet the task of selection has been, on the whole, so well performed that there is but little to which exception may be justly taken.

There are in the introduction good directions for making post-mortem examinations, followed by some brief indications for preserving and staining specimens. We feel, however, bound to point out that this latter portion is hardly equal in fulness to what might have been expected or desired. Entire absence of reference to the paraffin method of embedding, and the excessive praise of the celloidin for general tissues, is hardly warranted at the present day; nor do we agree that Müller's fluid is to be compared with corrosive sublimate as a means for fixing the tissues.

Passing to the more strictly pathological part of the work, we note that the section on Micro-Organisms is good, though brief, the plates being clear and plentiful. In the section on Tumours there is cautious reference to the parasitic theory, and the "organisms" described in relation to the epithelial cells are referred to as "inclusions," their fungoid nature not being proved in the opinion of the authors.

The proportion of the various parts is a point of difficulty in a work such as this; and we might suggest that the section on Immunity is somewhat too lengthy compared with the treatment of other parts, especially since the whole subject is viewed more from the aspect of Pathological Anatomy than from that of General Pathology.

Throughout the whole of the book there are numerous excellent woodcuts and photographs, many of the former being coloured; and great credit is due to the authors for the many excellencies of their work. We may safely recommend it as a useful and well-arranged manual on the present state of Morbid Anatomy and Histology.

Physical Education. By FREDERICK TREVES, F.R.C.S., Surgeon to, and Lecturer on Anatomy at, the London Hospital; Member of the Board of Examiners of the Royal College of Surgeons; Vice-President of the British College of Physical Education. Reprinted from *A Treatise on Hygiene*, by various authors. Edited by STEVENSON and MURPHY. London: J. & A. Churchill: 1892.

THERE are many people, even in the medical profession, who think that the mind is everything, and fancy that the body may be allowed to take care of itself. To such, if they are still open to conviction, we recommend a perusal of this book. It is not long—only 75 pages—but all the important questions connected with physical exercise are clearly and fairly discussed.

The author begins with the general effects of exercise upon the body and mind; next he discusses breathlessness, fatigue, and stiffness, and then passes to the effects of excessive and unsuitable exercise upon the heart and bloodvessels, the lungs, bones, and muscles, and especially as a cause of hernia. This leads him to training, which is essentially a preventative of over-strain. Many false ideas are current among schoolboys and university men on the subject of training. These in most cases have been derived from the traditions of professional runners, who ran well not because of, but in spite of, their faulty methods of training. The writer well remembers the ascetic rigour of diet, and the sweating exercise before breakfast prescribed for him twenty years ago by a "professional" consultant. Luckily he took no harm.

Mr Treves, we are glad to see, takes a rational physiological standpoint on training, and dissuades our rising athletes against the follies of their predecessors.

After this subject come the sports and exercises for which training is undertaken, so we are brought to "specific exercises," such as walking, fencing, boxing, etc. Then come some elements of physical education, followed by forms of physical exercise, classed as those of strength, of speed, of endurance, of skill, and as specially developing the chest.

Lastly, as the important application of what has preceded, advice is given as to the selection of exercises according to the individual needs of children, girls and women, lads, adults, and the middle-aged and elderly.

The best authorities on physical exercise have been consulted, and telling quotations are made from their works. Mr Treves' style is breezy and strong. He has evidently enjoyed his pull on the river, and would probably be found no mean exponent of the cause he so ably pleads.

A Manual of Bacteriology. By GEORGE M. STERNBERG, M.D., Deputy Surgeon-General U.S. Army; Director of the Hoagland Laboratory, Brooklyn, N.Y. New York: William Wood & Co.: 1892.

IT is unnecessary at the present day to emphasize the importance of a knowledge of bacteriology to the physician. The value of such knowledge is universally recognised, though, as a result of our defective system of medical education, it is by no means universally possessed.

The work before us will prove of the greatest value to those who wish a book of reference dealing with all branches of bacteriological science. So laborious a task as the compilation of this closely-printed volume of nearly 900 pages has not been previously attempted by any bacteriologist. Deputy Surgeon-General Sternberg is to be congratulated on the results of his labours, involving, as they must have done, not only the study of a vast amount of literature in many languages, but also an extended experience of laboratory work. To the publishers, too, the highest praise is due for the admirable series of illustrations with which the text is supplied.

The general arrangement of the work is well planned. It is divided into four sections. In the first the author deals with classification, morphology, and general bacteriological technique; in the second he takes up the general biological characters of micro-organisms. In the third division the pathogenic organisms, and in the fourth the saprophytic forms are considered. The more practically important parts of the work are printed in large type, while matter of less importance is relegated to small type. There will, of course, be considerable difference of opinion as to what should have appeared in the one and what in the other type, and possibly the author's ideas on this point may merit some criticism.

As to the first section of the work little need be said. The descriptions of methods are usually clear and terse, and the illustrations admirably elucidate the text. We object somewhat to the translation of "stich cultur" as "*stick* cultivation." Surely "*puncture* cultivation" is more correct and elegant. The second part contains many chapters of great interest and importance, leading up to a general consideration of practical disinfection. The least satisfactory of these chapters is that dealing with "Ptomaines and Toxalbumins." The third is the most important section of the work, dealing, as it does, with micro-organisms in relationship to disease. The general questions of the mode of action and method of introduction into the body of micro-organisms, and the susceptibility and immunity of animals, are first considered. Then the various organisms connected with specific morbid conditions are described *seriatim*. Of the fourth part little need be said. It contains descriptions of an endless series of organisms, which we sincerely hope do not really exist as distinct species. Probably their true relationship to one another will be cleared up by further investigation. So many points are discussed in the volume that it probably would be irrational to expect fuller treatment of some of them. But it seems to us to be a blemish on an otherwise meritorious piece of work, that some of the more important issues have not been more thoroughly considered.

Medical Microscopy: A Guide to the Use of the Microscope in Medical Practice. By W. FRANK J. WETHERED, M.D. (Lond.), M.R.C.P., Medical Registrar to the Middlesex Hospital. London: H. K. Lewis: 1892.

A HANDY book of reference: it contains descriptions of all the bodies which could possibly be found under the microscope in general practice, with also details of the different methods of hardening, cutting, and staining the various tissues. The detection of adulterated foods by microscopic means also is touched on. Altogether a useful book for those who do not use the microscope very often, and who require teaching in its management. Bacteriology is touched on, but not very fully; it might have been left out altogether, and monographs on the subject referred to.

A New Pronouncing Dictionary of Medicine; being a Voluminous and Exhaustive Handbook of Medical and Scientific Terminology, with Phonetic Pronunciation, Accentuation, Etymology, etc. By JOHN M. KEATING, M.D., LL.D., and HENRY HAMILTON, with the collaboration of J. CHALMERS DA COSTA, M.D., and FREDERICK A. PACKARD, M.D. With an Appendix, pp. 818. Edinburgh and London: Young J. Pentland: 1892.

ACCORDING to its introduction this dictionary is "an attempt at producing a work that not only gives clear and concise definitions, ... but is also a *pronouncing* dictionary in the true sense of the word." Those that turn to it for an approved pronunciation will in most instances find what they want, although they may find themselves unable to say how the authors pronounce *leucocythæmia*, and may prefer the common unclassical enéma, about which nothing is said, to the more proper and somewhat pedantic énema. But for one reader that uses it for pronunciation a dozen will turn to it for definition; and by its utility in this respect it will principally be judged. Two questions may be asked about a new dictionary—(1.) Does it present any new feature? (2.) Does it do better what is already done in other similar books? The new features of this book are to be found in the Appendix. They are Tables of Weights and Measures, Measurements of the Female Pelvis and the Fœtal Head, Eruption of Teeth, Table of Cardiac Murmurs, Nerve Distribution, Characteristics of Bacteria, Tables of Doses, Incompatibles, Poisons, Lists of New Drugs, Motor Points, Formulæ of Solutions, etc., all by specialists in their own department. These form the most valuable, as being the most special, part of the work; and the information has been admirably selected, and is very readily accessible. Regarding the body of the work, which is what students will most largely consult, it must be pronounced to be very similar to most books of its kind; and despite the fact that it has had four editors, it must be allowed to be disappointing. "Clear and concise definition" is too often what is not found; and not infrequently when the definition is clear and concise it is altogether wrong. A few instances will show this. *Nubile* is defined as "marriageable; of the age of puberty." It would be interesting to know in what country a woman can be delivered of a full-grown child with safety to herself (*i.e.*, is nubile) at the age of puberty. "*Notochord*—chorda dorsalis; the spinal marrow," clear and concise, but sheer nonsense. *Bandl's ring* is defined as a constriction—surely a confusion of contraction with constriction. *Uvulatomy* is defined as *inflammation* of the uvula. *Darwinian Theory* is defined as "Darwinism; Darwin's hypothesis; the evolution theory advanced by Charles Darwin, that species are not permanent and immutable, but undergo modification, and that the existing forms of life are the descendants by true generation of pre-existing forms." Darwin has surely written in vain for the three M.D.'s whose names appear on the title-page when they confuse Evolution with Darwinism after this fashion. *Hydatid mole* is defined as a degeneration of the *placenta*. *Latex* is "the vital fluid of vegetation," whatever that means. Capricious editing, seen so often throughout the book, is shown by such instances as the following:—The causes of *Abortion* are enumerated under the headings, maternal and fœtal; but paternal causes are ignored, and no mention is made of syphilis as a cause. It would have been more in accordance with the purpose of a dictionary to have classified abortions instead of enumerating causes. Haversian canal and Haversian gland are defined, but not Haversian system. The existence of a superior mediastinum is not mentioned, but this is perhaps pardonable. *Infection* is properly defined, but the term *infectious* ignores this proper definition and has nothing corresponding to it. Why the authors think it necessary to give the *treatment* of chordee is a puzzle which no part of the book gives one the least help to solve. In the classification of *fistula* as *rectal*, etc., there is no mention of *umbilical fistula;* and the terms *fæcal fistula* and *urinary fistula* are omitted. *Distad*, a good, serviceable word, finds a place, but not its correlative term *proximad*. *Meso*-rectum is defined, but not *meso*-nephros in the sense of a mesentery for the kidney. The classification of *talipes* does not include *talipes arcuatus* and *talipes plantaris*. *Coloboma* might best be defined in reference to choroidal fissure, but there is nowhere any mention of choroidal fissure. Careful explanations are given of the various kinds of sutures employed in surgical operations, but the *Staffordshire knot* and all other knots are passed by. Many words are omitted that ought to be included, such as *conjugate* (diameters of the pelvis), *invagination* (of the blastoderm), *rejuvenescence* (the book is lamentably weak in biological terms), *involution* (of the uterus, as a special term), *rider's bone*, *viable* (as applied to a child). Among other imperfections that become apparent when the book is examined critically are the following:—The inferior strait of the pelvis in the diagram on p. 745 is called the superior. The dose of creasote is stated in *minims* instead of *drops*, thus making it double what it is in the B. P.

Faults of accuracy, capricious selection and treatment of terms, and omissions, are too numerous in this work to allow it to take a permanent place among medical dictionaries professing to give clear and concise definitions. Its pretensions to being an exhaustive handbook of medical terminology will not stand even a cursory examination.

A Pocket Medical Dictionary. By GEORGE M. GOULD, A.M., M.D., Author of *A New Medical Dictionary.* London : H. K. Lewis : 1892.

THIS is a small handy pocket volume, containing 12,000 words, most of them defined within the compass of a single line. Such a mode of definition presents many difficulties to a junior student; but senior students and practitioners will find this little volume very useful for defining out of the way terms not to be met with in any other book of its size and price. It contains several very useful tables.

The Year-Book of Treatment for the Year 1893 : *A Critical Review for Practitioners of Medicine and Surgery.* London, Paris, and Melbourne : Cassell & Company, Limited.

WE welcome this, the ninth annual volume of the series. Two new articles have been added this year, one on Anæsthetics by Dr Dudley Buxton, another on Public Health and Hygiene by Prof. W. H. Corfield. The names of the other contributors remain the same. The volume is, as before, thoroughly comprehensive and reliable, and the amount of information between its red boards is enormous,—indeed, the amount is somewhat alarming. Every practitioner should possess this, the best of the annuals, the excellence of which is so well maintained.

Book on the Physician Himself, and things that concern his Reputation and Success. By D. W. CATHELL, M.D., Baltimore, Mich. Tenth Edition, carefully Revised and greatly Enlarged. Philadelphia and London : The F. A. Davis Co. Publishers : 1892.

A BOOK that has reached its tenth edition may be said to have justified its existence. This is an amusing, instructive, and fairly edifying advice to a young doctor. Many of the topics discussed are American, not British, in their tone, and some of the advice given sounds curious and unnecessary to our ears. However, it is full of shrewdness and a certain amount of humour; and a young physician who reads it carefully will get some hints as to his conduct of his profession as a trade,—not the highest view of its responsibilities.

Discussion on the Effects of the Habitual Use of Opium on the Human Constitution. Calcutta : Thacker, Spink, & Co. : 1892.

EVERY now and then a discussion arises in both medical and lay papers as to the horrors of the opium traffic and the terrible ravages which the use of the drug is creating in India and China. The opponents in this discussion are all apt to make strong statements, and it is sometimes difficult to form any opinion as to how far the statements are exaggerated or biassed. The paper before us, which forms a supplement to the *Indian Medical Gazette* for July 1892, contains the account of a discussion which took place in the Calcutta Medical Society at two meetings held in May, and contains a mass of information which we think should go far to clear up the matters in dispute, and we should advise all interested in the subject to obtain and peruse the paper with care. It is all the more valuable because of the able summing-up by Surgeon Lieutenant-Colonel A. Crombie, and the statistics given as to the admissions into the various lunatic asylums of patients addicted to the use of ganja, spirits, and opium. Dr Ram Moy Roy also gives a table of 215 opium eaters, specifying the age at which they began to eat opium, the daily quantity taken, their occupation, and their present condition of mind and body, from which it appears that only eight are in indifferent bodily health; none appeared to have suffered mentally. It would be impossible in the space at our disposal to do more than quote the concluding paragraphs of Dr Crombie's summary. He says,—

"With regard to the comparative evils of opium and alcohol there was only one voice. They are, indeed, not comparable. Those of alcohol are so comprehensive, so awful, so degrading, so terrible, individually and socially, so far-reaching in their consequences, not only in the diseases, bodily and mental, which it gives rise to, or in the destitution and misery of those dependent on the spirit-drinker, but in the physical and moral defects of his progeny; while those of opium-eating are so little obtrusive that a medical man may spend the best part of his lifetime among opium-eaters in India, with every opportunity of noticing its evils if they existed to any great extent, without meeting with half a dozen instances of opium wreckage; and the picture of England, with a voice husky with alcohol and a finger shaking with drink, admonishing the mute expectant people of India on the depravity of opium-eating, and, purblind with the beam in her own eye, seeking out painfully the mote in her neighbour's, is one of the most curious of modern times.

"Another point on which there was practical unanimity was as to the impetus which interference with the opium traffic would give to the habitual use of alcohol and ganja by the people of India. The appalling evils of alcohol are only too familiar already in India, especially among the better classes of our large towns, the rich Baboo and his poor, overworked, and underpaid clerical brother, as a consequence of the cheap liquors imported so freely from Europe; while the evils of ganja are clearly set forth in these papers, especially as an incentive to violent crime and as a cause of insanity. Experience shows that at present the particular intoxicant indulged in is to a considerable extent a matter of cost. The majority of the law-abiding peasantry prefer opium because it is little harmful, and seems to offer them some protection against malaria; but the Excise reports show that where the policy of Government has made the price of opium nearly prohibitive, there is a 'rush to alcohol' and ganja; and *vice versa*, where the abolition of out-stills makes country spirits dear and difficult to obtain, there is an increased consumption of ganja and opium (see the Excise Consumption of Ganja and Opium for Bengal for 1890-91, pages 36 and 40). The peasantry of Bengal take to these intoxicants, not from vice, but because of the miseries of their lives, their ague, their rheumatism, and the hardness of their lot; and they will probably do so

> 'As long as the heart has passions,
> As long as life has woes.'

"And if it is so, if it is to be a question of alcohol, or opium, or ganja, a thousand times let it be opium."

The Indian Medico-Chirurgical Review. Vol. I., No. 1., January 1893. Edited by N. H. CHOKSY. Bombay: Rao & Co.

The Medical Reporter. Vol. II., No. 2., February 1893. Edited by LAWRENCE FERNANDEZ, M.D., Calcutta.

THERE seems to be very considerable activity in journalistic enterprise in India. *The Indian Medico-Chirurgical Review* is edited by one native medical practitioner, and apparently entirely written by others,—that is, so far as original articles are concerned. There is a lengthy memorial about the modes of appointing professors in the Grant Medical College, in which the claims of local talent are advocated with considerable prolixity. A review or two, and copious extracts from European journals, fill up the sixty-six pages.

The Medical Reporter, now entering on its second year of existence, is a very fair imitation, in smaller size and a monthly issue, of an English or American medical weekly. It contains an admirable article on Wound Treatment by Dr Rutherford Morison of Newcastle-on-Tyne, and some other original articles varying much in merit and importance. It has a Mirror of Practice, leading articles, and a London letter, and what more can any right-minded reader require? In both periodicals there is room for improvement in press corrections, as may fairly be explained and excused, as the language is probably a foreign one both to printers and editors.

Mineral Springs and Health Resorts of California. By WINSLOW ANDERSON, M.D. San Francisco: 1892.

ACCORDING to the author of this book the mineral springs of California compare very favourably with those of Europe and Eastern States of America; and, indeed, it seems to be a fact that many of the waters are almost identical with those obtained at celebrated European spas. Dr Anderson has analyzed all the prominent mineral waters in California, and has appended to his work an analysis of all the principal European mineral springs. The book will undoubtedly be of use in America, and will give valuable information to any physician who is sending patients to California. The illustrations are unequal in merit, but they serve to point out the beauties of the scenery.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXXII.—MEETING IV.

Wednesday, 1st February 1893.—Mr Joseph Bell, *President, in the Chair.*

I. Election of Member.

John MacRae, M.D., J.P., Lynewood, Murrayfield, was elected an Ordinary Member of the Society.

II. Exhibition of Patients.

Mr C. W. Cathcart showed two patients who had recovered after LAPAROTOMY. The first patient was a young woman who had suffered from what he believed to be tubercular peritonitis. He operated upon patient in May 1890. She was then 25 years of age. She had been in good health until two years before, when she began to fall off in flesh. About a fortnight before she came under his observation, she was suddenly seized with sharp pain in the right iliac region. It passed off under fomentations. Some days later she was again suddenly seized with intense pain in the same situation. It passed off, but recurred next morning. She called in Dr James Smith, who found all the symptoms of a localized peritonitis. There was also high temperature, sickness, and a history of constipation. She was treated with opium and fomentations, but did not improve, so Mr Cathcart was asked to see her. He had no doubt that she was suffering from peritonitis, but was uncertain whether or not it was due to a ruptured vermiform appendix. An enema was given and opium continued until next day, when he opened the abdomen in the right linea semilunaris. He found no ruptured vermiform appendix, but a condition indicating tubercular peritonitis. The abdomen was washed out, and next day patient's temperature fell and sickness stopped. Patient made a satisfactory recovery, but six weeks afterwards had another attack. She became very ill, and was evidently moribund. He happened to be from home, and the case was seen for him by Mr Miller, who opened the cicatrix, evacuated much fluid from the abdomen, and put in a drainage-tube. Patient made a slow but satisfactory recovery. Three or four abscesses opened in the region of the scar and discharged caseous matter. The last of these abscesses closed last March. Since then patient had had no further trouble, and was now in a very fair state of health.—The second patient was an old man of 74, upon whom he had performed laparotomy for internal strangulation. For nine years patient had worn a truss for a right inguinal hernia. It seemed cured, and patient discarded his truss. One day, in the act of jumping down, he felt pain in the right iliac fossa. He afterwards walked home, a distance of two miles, the pain all the time becoming worse. He took his dinner, and immediately afterwards began to vomit. This continued for two days. Mr Cathcart was then called in to see him. He expected to find a small hernia in the sac, but found none. There was some hardness in the neighbourhood of the internal abdominal ring. From the symptoms he came to the conclusion that there was internal strangulation of the bowel, and opened the abdomen in the right semilunar line. He found collapsed and dilated portions of bowel, which he traced down to the right iliac fossa. On pulling the bowel, a little bit came out from somewhere. It had been caught in some narrow little pocket, and there was regularly the impression of a *Littre's* hernia. The portion of the calibre of the bowel which had been caught was congested, but not gangrenous. It was returned, and the wound sewed up. The patient had since had no trouble.

III. EXHIBITION OF SPECIMENS.

1. *Dr Ramsay Smith* showed a specimen of LYCOPERDON GIGANTEUM, his experience of the application of which to alveolar hæmorrhage he had already recorded in the January number of the *Edinburgh Medical Journal*. He mentioned some cases in which he had used it, and stated that he had always found it to act perfectly as a hæmostatic. He had found that the most convenient way to use it was to cut the fungus into thin slices. It could then be torn up to any size. It was suitable to all sorts of bleeding, and made a very fine surgical dressing. Not a drop of blood would go through the material. In reply to questions by Dr Craig, the President, and Mr Cathcart, he stated that the spores were not taken out of the material before it was used; that he had not had any difficulty owing to the spores, which it was said were poisonous, being swallowed; that the material was not sterilized; and that with regard to its mode of action, though its mechanical action seemed to be almost perfect, it did not seem to him to explain all its effects.

Dr A. L. Turner said that it had no doubt more than a mechanical action. It had an astringent action, a fact which Pareira recognised and mentioned in his book.

The President said they had been warned lately from America not to use cobwebs for hæmorrhage, because of their septic character. There might be a similar objection to the use of this material.

2. *Dr Robert Abernethy* showed some MICROSCOPIC SECTIONS from a piece of tissue which had been passed per rectum by a patient in the Royal Infirmary. The patient was under treatment for pernicious anæmia, and was in an extremely low condition. Ten days after admission, without any previous symptoms pointing to intussusception, but following a marked rise of temperature, he passed a mass of pulpy gelatinous tissue five inches long and two and a half inches broad, which at one end formed a tube which was invaginated. Microscopic examination showed that it consisted of the whole thickness of the intestine. The patient was now doing extremely well in every respect.

The President said the case was one of an extraordinary character, and ought to be well considered. He did not think there was anything of the kind in surgical literature as the formation and separation of an intussusception without symptoms.

Dr Allan Jamieson suggested that it might have been something swallowed, such as tripe.

Dr Abernethy replied that this was impossible, as patient had been very carefully dieted.

Dr Taylor said he thought the mass must have been a mucous cast. The important point was whether or not there were any muscular fibres to be seen.

Dr Abernethy said he thought the microscopic specimens showed a complete cross section of the bowel.

Dr Norman Walker said he had examined the specimens, and thought it was absolutely beyond doubt that they showed the muscular coat of the intestine.

Dr Abernethy admitted that, although the mucous coat was extremely clear, the layers below it were blurred. Still he had no doubt in his own mind that there was muscular coat present.

Mr C. W. Cathcart thought that the extremely feeble condition of the patient might account for the absence of symptoms.

The President said that, if it was an intussusception, the case was a unique one, and should be carefully investigated and put on record.

Dr M'Bride suggested that a committee should be appointed to investigate the case.

After some further discussion, Professor Greenfield and Dr Russell were appointed a committee to investigate the matter, and report to the Society.

Dr Abernethy replied.

IV. Exhibition of Instrument.

Dr M'Bride showed a new form of NASAL SPECULUM, suggested by Dr Melville, Resident with Dr Macgillivray in the Royal Infirmary. As far as he knew, it was a novel modification of Duplay's instrument. It gave a wider field to sight and a wider field to operate.

V. Original Communications.

1. *Dr W. Allan Jamieson* read a paper on a CASE OF MYCOSIS FUNGOIDES, which was illustrated by a number of drawings and microscopic preparations shown by himself, Dr Leith, and Dr Norman Walker. Dr Jamieson's paper appeared at page 808 of this Journal.

Dr Norman Walker said the case was one of exceeding interest on account of its rarity. He had seen three cases—one in London, and two abroad. In these the nodules were much fewer in number than in Dr Jamieson's case, and the patients progressed favourably under treatment in place of going steadily down-hill. The disease had certain resemblances to leprosy, and, though different, might sometimes be difficult to distinguish from it. With regard to Dr Philippson's views on the eczematous stage of the malady to which Dr Jamieson had referred, French authors had maintained that that was not the true disease, but a sort of preliminary. He criticised Dr Leith's histological examination of the case. Like Dr Leith, he did not succeed in finding any micro-organisms. He believed that none had yet been regularly found in the disease. Inoculation experiments had proved absolutely futile. His opinion was that the disease was of the granulomatous type. The structure of the tumours in parts was very similar in appearance to that of a keloid. Against the view that the disease was sarcomatous they had the very extraordinary fact that a large number of the cases were curable by arsenic. The three previous cases he had seen all improved rapidly under arsenic. Clinically the disease was certainly not sarcomatous.

Dr Leith said that the appearances in the disease, which was a new one to him, were all strongly suggestive to his mind of sarcoma. On making the post-mortem examination he was quite prepared to find secondary growths in the internal organs, but found none. On examination of the tumours histologically they seemed distinctly nodular, an appearance which was more prominent at the margin than at the centre. The main cells were, to his mind, very sarcomatous in nature. He was not yet certain if the reticulum was a new formation. In the centre of the growth it certainly degenerated in a manner which was frequently seen in sarcomas. He was not sure that the disease was sarcomatous. He thought merely it was more of the nature of a sarcoma than of a granuloma.

Dr William Russell said there seemed to be a difference of opinion as to the nature of the growths. He did not think that sarcoma ever became diffused in the way that had been described as occurring in this case, forming subcutaneous tubercles, and without any internal tumours. The tubercles, judging from the cast, were more like leprosy tubercles than anything else. He had examined the microscopic sections shown, and there was nothing in the structure of the nodules that could lead a pathologist to say, with any degree of certainty, that they were sarcomatous growths. As a matter of fact, they had to depend to a great extent upon clinical experience in settling what place certain structures occupied. They were abundantly familiar with the mistake that pathologists made from time to time in diagnosing things as sarcomatous which had nothing to do with sarcoma. Granulomatous tissue had frequently been mistaken by eminent pathologists for sarcomatous tissue. He thought the sections were exceedingly suggestive of leprosy, and that it should be made quite sure that leprosy was excluded in the case. He called the attention of the dermatologists to a paper in a recent number of the *Centralblatt für Bacteriologie* upon a case of Mycosis Fungoides, in which psorosperms were described and photographs given, and some of these were more like psorosperms than many things which had been figured in that connexion.

Dr Jamieson, in reply, said he had to thank his friends for the kind reception they had given to his paper. He had not been altogether ignorant of the subject of mycosis fungoides when this patient came before him, because at Vienna he had seen a case. It was, however, a much milder case than this one. Some of the tumours had undoubtedly disappeared. They had disappeared spontaneously, and not under arsenic. He had some doubt as to how far arsenic had anything to do with the cure in those cases which were said to have been cured by treatment with arsenic. Arsenic had been given in most of the cases of the disease recorded, and only a few cases had recovered. Some cases had recovered without arsenic. He thought that some of the cases reported to have recovered under arsenic might have been cases of sarcoma of the skin. Arsenic was said to exert a powerful curative effect on the sarcomata. Cases had been seen closely resembling mycosis fungoides which were undoubtedly cases of sarcoma. There were two points which went against Dr Russell's theory that the case might be one of leprosy. In the first place, the patient had never been abroad, and had never been in contact with any one likely to be a leper. In the second place, sections of the tumours had been very carefully stained for both the leprosy bacillus and tubercle bacillus, and neither had been found. He had exhibited before the Society some years ago a man who had tumours on his body, some of which had disappeared. They had had a peculiar purple hue round them, and presented a small round-celled growth on microscopic examination. That case he believed to be, not one of mycosis fungoides, but a form of scleroderma. There was no preliminary itching, and the disease lasted for eight years. It produced no fungoid appearance. The patient died from pneumonia, and not from the disease itself. In that case, too, the leprosy bacillus was absent. He thought the best plan was to consider mycosis fungoides as a disease *per se* in the meantime. It had close connexions, no doubt, with the sarcomata and the granulomata.

Dr Leith said he had stained sections from this case for the leprosy bacillus side by side with sections of a tumour from an undoubted case of leprosy, and he had found the organism only in the latter.

2. On account of the late hour, a paper by Dr M'Bride, on PACHYDERMIA OF THE LARYNX, which was also on the billet, was held as read. This paper appears at page 911 of this Journal.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION LIV.—MEETING IV.

Wednesday, 8th February 1893.—Prof. A. R. SIMPSON, *President, in the Chair.*

I. *Dr Robert Bell*, Glasgow, exhibited an OVARIAN TUMOUR, together with some of the semi-solid contents which were adhering to the walls of one of the cysts. The weight of the tumour, together with the fluid and other contents, was 20½ lbs. It was removed this morning through an incision, three inches in length, from a woman aged 33, the mother of nine children, the last of which was born six weeks ago. The tumour was multilocular, the first cyst which was punctured containing a claret-coloured glairy fluid, at the base of which was situated a considerable amount of placenta-like tissue. The next cyst that was emptied contained a substance very much resembling fæces in its appearance, of an olive-green colour, and having a slightly fæcal odour. The next two cysts, which were of considerable size, were filled with quite a limpid fluid. Thus there were three different characters of cyst in the one tumour. Upon the surface of the tumour was spread the Fallopian tube, with the fimbriated extremity spread out and closely adherent to the cyst wall. The pedicle was all that could be desired, and although adhesions were pretty extensive over the whole external area of the cyst, these were easily broken down, and the tumour was removed without any difficulty. The left ovary was also cystic, and the tube, which was highly congested, was considerably distended by a serous fluid. These, therefore, were also removed, with the view of doing away with any possibility of future mischief. The case is specially interesting, because of the fact that the patient is the mother of nine children at the comparatively early age of 33. In ordinary circumstances one would have feared that the cyst would rupture during labour, but, so far from this, it did not either materially impede delivery nor interfere with her recovery. The cyst, however, had taken on a very much more rapid growth since her confinement. The parietal peritoneum was very much thickened and highly congested, giving rise to a suspicion that possibly there might be some malignant disease present.

P.S.—This patient returned to her home twenty-seven days after the operation perfectly well.

II. *Dr J. W. Ballantyne* read his paper on OMPHALO-ANGIOPAGOUS TWINS, VARIETY PARACEPHALUS DIPUS CARDIACUS, which will appear in a future number of this Journal.

The President said the Fellows had listened with interest to this new and valuable contribution which Dr Ballantyne had made to the subject of Teratology. These researches were all of importance, and Fellows would do a good service to the Society and to science if they sent to Dr Ballantyne all the specimens of deformed fœtuses that came under their observation. As to the special communication of the evening, the President thought that Dr Ballantyne would do well to adopt the designation Allantoido-angiopagus instead of Omphalo-angiopagus. The latter term, which was not yet widely employed, suggested the idea that the vascular communication between the twins took place between their omphalo-mesenteric vessels, whilst in reality observation seemed to show that the anastomosis took place among the vessels that go to form the placenta, and that are of allantoidal origin. It had struck him (the President), in listening to the paper, that it would be of some moment to study in these cases the relations of dropsical and myxœdematous conditions to the absence of the thoracic duct and of the thyroid gland; and it seemed to him further to be peculiar that the hydramnios should have been found in the sac of the parasitic instead of in the sac of the well-formed twin. For the tendency of the production of hydramnios in twins had been attributed to increased renal secretion from the twin that was supposed to have the stronger heart and more active circulation.

Dr Symington agreed with the President in thinking that the term allantoido-angiopagus was preferable to that of omphalo-angiopagus for the group of monsters described by Dr Ballantyne. He desired, as an anatomist, to express his high appreciation of the scientific and practical value of Dr Ballantyne's teratological researches.

Dr J. W. Ballantyne thanked the President and Dr Symington for the kindly and encouraging remarks they had made concerning his communication. In reply to the President's questions, the absence of the thyroid was noted in only one case, and in that the œdematous state of the subcutaneous tissue was very marked.

The absence of the thoracic duct was also noted only once. He had hesitated to coin a new name for the omphalo-angiopagi, but certainly Allantoido-angiopagus was the more correct designation, and he would in future adopt it.

III. *Dr J. Haig Ferguson* read the second half of his paper on UTERINE ROTATION: ITS CLINICAL IMPORTANCE IN PREGNANCY AND LABOUR. The first part of this paper appears at p. 930 of this Journal.

Dr Barbour thought we must distinguish between anatomical and physiological rotation. That the uterus lay slightly rotated in pregnancy there was no doubt; that it rotated itself during the contractions of labour was not yet demonstrated. From Dr Haig Ferguson's using the analogy of the heart, he implied that physiological rotation occurred,—that is, that during a pain the uterus turned on a vertical axis. As to the compression of the normal ovaries producing shock, there was no evidence that the normal ovary was sensitive like the testicle. When pain is produced on compression of the ovaries it might be due to a localised peritonitis rendering the ovarian region sensitive. If compression of the ovaries produced shock, we should have this as a frequent occurrence in Tait's operation, where the ovaries are constantly squeezed, and more directly than ever during the third stage of labour. Dr Barbour had noticed alterations in the respiration and other evidence of disturbance in some cases when the pedicle was being tied, but never on grasping the ovary. He congratulated Dr Haig Ferguson on his interesting and comprehensive paper, although he did not agree with all his conclusions.

Further discussion was postponed.

IV. A paper ON THE TREATMENT OF DISEASES OF WOMEN AT PYRMONT, by Dr Marcus (Berlin and Pyrmont), and communicated by Dr Felkin, was read.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

MEETING IV.—*Feb.* 22, 1893.—Dr ROBERT POLLOK, *President, in the Chair.*

I. *Dr Halket* showed an UMBILICAL CORD WITH A KNOT, which had caused the death of the fœtus.

II. *Dr A. Maitland Ramsay* read a paper on DISEASES OF THE EYE MOST FREQUENTLY MET WITH IN GYNÆCOLOGICAL AND OBSTETRICAL PRACTICE, and illustrated it by means of the limelight. In introducing the subject he referred to the intimate vascular and nervous connexion of the eye with other parts, whereby the nutrition of the eyeball was governed at all times by changes in the nutrition of the body as a whole. He wished to draw attention to the frequent association of eye symptoms with functional changes in the female genital organs:—(1), Changes incidental to menstruation and its disorders; (2), to pregnancy and the puerperal state; (3), the changes which were liable to occur during lactation.

1. With the establishment of menstruation certain eye diseases attained their maximum of frequency, *e.g.*, inflammations of the cornea, of the sclerotic, of the iris and choroid, and even of the optic nerve and retina, though for the most part this was to be regarded as coincident with, rather than dependent upon, the occurrence of menstruation. He gave notes of a case of inflammation of the cornea and sclerotic which had relapsed at each menstrual epoch, although almost well in the intervals. Defects of visual acuteness, and contraction of the field of vision, had been noted as occurring during menstruation. Frankelstein's investigations had shown that the limitation in the field of vision began two or three days before the commencement of the flow, and reached its greatest intensity on the third or fourth day of menstruation. The limitation was greatest where there was most disturbance, especially where the loss of blood was abundant. The colour sense also was disturbed, especially for green, 20 per cent. losing it. Vicarious menstruation had sometimes occurred into the eye. Lawrence had recorded a case. Effusion of blood into the vitreous at the climacteric period was not uncommon. He mentioned the amaurosis menstrualis and the ophthalmic menstrualis of the old writers, and gave two theories of causation, viz., reflex and toxic, and instanced cases.

2. In pregnancy the most important group of eye affections was dependent upon or associated with retinitis albuminurica. He divided them into two classes—(1.) Complete blindness for the time being, with no gross retinal lesion; (2.) Those without great visual defect, but with characteristic lesions of the optic nerve and retina. In the latter the defect was more or less permanent, and if complicated with uræmic poisoning, might pass into complete blindness. He gave illustrative cases. In the albuminuric retinitis of pregnancy one eye only might be affected; but in that due to chronic renal disease, both eyes were, as a rule, affected simultaneously. Separation of the retina might occur during pregnancy by itself, or along with albuminuric retinitis. The prognosis was more favourable than in ordinary circumstances. During the puerperal state embolism of the central artery of the retina, with sudden and complete blindness, had occurred. Mackenzie had given several cases of ophthalmitis after delivery. The patients, as a rule, had died with all the signs and symptoms of pyæmia. After severe post-partum hæmorrhage, marked diminution of vision, followed by atrophy of the optic nerve, had occurred. He considered at some length ophthalmia neonatorum, and said that more than 10 per cent. of all cases of blindness were due to it. If these cases were seen early and properly treated, they should recover; but if the cornea had become involved, the prognosis was unfavourable. He dwelt strongly on the prophylactic treatment, which had reduced the

percentage in Leipzig Lying-in Hospital from 7·5 per cent. to 0·5 per cent. The curative treatment he advocated was thorough and frequent cleansing with 1 to 10,000 corrosive sublimate or saturated boracic acid solutions, and brushing once a day with 2 to 4 grs. to the ounce of silver nitrate. If ulceration of the cornea had occurred, atropine or eserine should be applied: the former if it were central, and the latter if it were peripheral. If the ulceration were severe, a compress and bandage should be applied.

3. During lactation atrophy of the optic nerve occurred when there had been a rapid succession of children. Functional disturbances were common, most marked in women affected with hypermetropia. Episcleritis he had seen occur when the patient had been enfeebled by prolonged lactation. Power had pointed out that obstruction of the lachrymal ducts and lachrymal abscesses were not uncommon. The child sometimes scratched the mother's cornea, and he had found these wounds very difficult to heal, as there was a tendency to suppuration on account of the vitality of the cornea having been lowered by the exhaustion of the system.

In the discussion which followed, the President, Drs Reid, Cameron, Richmond, Gunn, and Howie took part, and Dr Ramsay replied.

ROYAL MEDICAL SOCIETY.

Feb. 17, 1893.—Dr Crerar in the chair.

Mr Welsh showed an infant with a Bifid Hand, being the fourth recorded instance of this malformation; also an infant suffering from Genetous Idiocy, apparently due to premature ossification of the frontal suture and anterior fontanelle. In introducing his cases Mr Welsh alluded to the Hunterian centenary, and quoted Hunter's views on the importance of teratology.

Dr Giles then read a paper on "Certain Curious Symptoms attributed to Witchcraft in Aberdeenshire during the 16th Century." The persons supposed to have been bewitched were stated to have suffered for one half of every day from excessive heat and great thirst, while for the other half of the day they experienced extreme cold and copious sweating. In all thirty-seven instances of this affection were recorded, of which many were fatal. In discussing the possible cause of such symptoms, he suggested that ague would fulfil many of the required conditions.

Dr Murray Leslie read his dissertation on "Phagocytosis and Immunity," in which he discussed in detail the subject of immunity, natural and acquired, and the theories which from time to time have been advanced to explain it.

Feb. 24, 1893.—Dr Fowler in the chair.

Dr D. C. Watson showed a patient who had been successfully treated for Myxœdema by the administration of thyroid gland as food. The improvement had been rapid and continuous, and no unfavourable symptoms had occurred, except some cardiac debility, which was attributed to the action of the gland.

Dr Macaulay also showed a patient suffering from Myxœdema, who had been under observation for twenty years. Treatment by sheep's thyroid had just been started, but as yet no change had been observed.

Some discussion followed on the treatment of myxœdema by various preparations of the thyroid. The adjourned discussion on Dr Murray Leslie's dissertation on Phagocytosis and Immunity was then resumed, and taken part in by a considerable number of members.

Mr Hutchison read a paper on "Neurosis in Children," in which he pointed out the important relation of rickets in this connexion. He emphasized the necessity of treating the rickets as the essential cause in most cases, and deprecated the use of sedatives as a routine treatment.

March 10, 1893.—Dr Rainy in the chair.

Mr M'Carthy read an interesting case of "Fracture of the Patella in a Boy 14 years of Age," in which there was ligamentous union, which resulted in a perfectly useful limb.

In discussing the case, *Dr Crerar* mentioned one which had come under his observation, in which there was compound fracture of the patella, which involved the knee joint. The treatment employed was total removal of the patella; the result was most successful.

Dr Giles then referred to a case in which bony union had been obtained by means of a pin passed through the tissues immediately above the upper fragment, and another one through the ligamentum patellæ.

Dr Wallace and *Dr Rainy* also quoted cases.

Dr Lim Boom Keng gave a lengthy and immensely interesting communication on the "Differentiation of Leucocytes," which we hope will be published and appear in a complete form shortly. Dr Orr, Dr Crerar, and Dr Murray Leslie entered into a discussion on the paper.

A dissertation on the "Chemistry and Physiology of Medicine" was then read by one of the members of the Society. The merit of the paper was so far below the standard required by the Royal Medical Society, that on being put to the vote it was decided by a large majority that the dissertation should be rejected. This is, we believe, the first occasion on which such a course has been considered necessary.

Dr Bremner showed specimens of a Ruptured Heart and a Ruptured Liver, which were of much interest, and evoked a very hearty vote of thanks. Some discussion followed upon the probable cause of the rupture of the heart. The case was that of a woman who had been found on the railway lines after having been run over the abdomen by some trucks; there was no external bruising over the cardiac region. Cases were quoted in which life had been prolonged for comparatively lengthy periods after rupture of the liver.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

THE TRANSFUSION OF NERVE-SUBSTANCE IN THE TREATMENT OF THE INSANE.—In an able article, A. Cullewe (*Gazette Médicale de Paris*, August 27, 1892) discusses the above subject, formulating the following conclusions:—1. The transfusion of nerve-substance (I employ the method of Arsonval to sterilize the liquid) is well borne by deranged persons, as well as by tuberculous subjects, exercising an almost immediate stimulating action on the nutritive functions. 2. The first sign of this stimulation is an increase of the appetite, to such an extent that some patients appear unable to satiate their hunger. This action may be of importance in the treatment of mental weakness, to combat, in certain cases, sitiophobia; and I have seen it do good in many patients who systematically refused nourishment. 3. The reconstituent effects are rapid, muscular debility disappears, corpulence is developed, and all the organic functions become regular. 4. The psychopathic state, in curable cases, has been often ameliorated for hours after the injection, but a permanent improvement has not been obtained. All in all, I do not consider this conclusion as a definite one, since the majority of the cases treated have not exhibited a favourable prognosis from the beginning. It is the general rule, however, that, together with the improvement of nutrition, there occurs a similar modification in the mental state.—*Therapeutic Gazette*, February 15, 1893.

THE RESULTS OBTAINED FROM THE USE OF BROWN-SÉQUARD'S METHOD IN GREECE.—P. S. Pampoukis (*Revue Méd. de l'Année*, July 1892; *Revue Internationale de Bibliographie Médicale*, September 25, 1892), of the Bacteriological Laboratory at the Medical School of Athens, has been the first physician in Greece to employ the method of Brown-Séquard. Pampoukis used a substance prepared by himself from the testicular juice of rabbits and cocks, guinea-pigs being quite rare in Greece. The author first reported to the Medical Society of Athens the case of an old man, suffering from neurasthenia, in which the injections produced satisfactory results. This led the writer to try the method in other diseases. During the month of June last he made over 600 injections in the treatment of different disorders, comprising 6 of neurasthenia, 11 of spermatorrhœa, 3 of impotence, 4 of insomnia, 2 of frequent urinary emissions (due to a neurosis of the bladder), 2 of cardiac palpitation (without organic lesion), 2 of paraplegia, 1 of agoraphobia, and 1 of locomotor ataxia. Of all the patients, those suffering from spermatorrhœa, insomnia, palpitations, and neurosis of the bladder were completely cured. Of the neurasthenic cases, only 3 were cured, 1 was slightly improved, and in the other 2 only negative results were observed. In a later contribution (*Le Galieur*, July 24, 1892) the author states that while in some persons, especially those suffering from spermatorrhœa, the lymph produced a cure by a stimulating action on the cord, in others not affected with such a disease it caused orgasms. In concluding his valuable study, the author states that the substance prepared by himself has never produced erythematous inflammation or abscesses, and only a slight pain, lasting a few hours after the injection.—*Therapeutic Gazette*, February 15, 1893.

THIOPHENDIIODIDE: A NEW ANTISEPTIC.—Thiophendiiodide is strongly recommended by Zuckerdandl (*Therap. Monatshefte*, February 1893) as an efficient antiseptic possessing all the advantages of iodoform, but without producing irritation of the skin. On the other hand, it gives off an aromatic odour, is non-poisonous, and he has used it in the form of dusting-powder in sticks, and as a gauze containing 10 to 20 per cent. of the preparation. The author has applied it externally in phlegmonous ulcerations, unhealthy-looking lacerations, for plugging cavities, etc., observing a very rapid formation of healthy granulations. The substance even produced this result in cases where iodoform had been but slightly successful.—*British Medical Journal*, March 11, 1893.

SOZOIODOL-SODIUM IN THE TREATMENT OF WHOOPING-COUGH.—Guttman (*Therap. Monatsh.*, January 1893) has treated thirty cases of whooping-cough with insufflations of sozoiodol-sodium, about three grains of the powdered drug being blown into each nostril once daily. Six children were treated as in-patients; two of these were discharged cured within eight days from the commencement of the treatment; in the other four cases the frequency and violence of the attacks were diminished within from three to six days. In twenty-four out-patients a favourable effect was generally observed. —*British Medical Journal*, March 4, 1893.

THE ACTION OF GUAIACOL CARBONATE.—In a study of the action of this new combination of guaiacol, J. Brissonnet (*Répertoire de Pharmacie*, October 10, 1892) argues that in the economy of phthisical subjects it exerts on the toxine products of tuberculosis a modifying and eliminating influence. It is to the toxine products that, in the course of the malady, the fever, the night-sweats, and the disturbances of digestion and the general health are due. If such agents are destroyed, all these symptoms disappear. Guaiacol carbonate acts on tuberculin, the latter substance being modified by losing its sulphur, which enters into combination with the guaiacol. Thus the blood is freed, for a longer or shorter period, from the action of the toxine products. This theory, according to the author, may also be applied to the explanation of the mode of action of other medicinal agents, such as antifebrin, phenacetin, the various alkaloids, etc., which, like guaiacol, enter into combination with the toxines. In this sense the author considers guaiacol, and particularly the carbonate, an energetic medicament against phthisis, without, of course, excluding the possibility of finding a more heroic remedy.—*Therapeutic Gazette*, February 15, 1893.

LACTIC ACID IN DIARRHŒA.—N. V. Lojkin (*Lemsky Vratch*, Nos. 49 and 50, 1892, p. 775) draws attention to the great value of lactic acid in chronic dysentery and acute dyspepsia. He reports a severe case of the former, in which, after nitrate of silver, salicylate of bismuth, tannin, etc., had failed, the internal use of a 2 per cent. solution of lactic acid—half a tumblerful twice daily—was followed by complete recovery in nine days, blood disappearing from the stools in a day or so. He also adduces two cases of acute dyspepsia in which diarrhœa was checked by two doses of the solution taken in the course of twenty-four hours.—*British Medical Journal*, February 25, 1893.

THE TREATMENT OF BOILS BY BORIC ACID.—*L'Union Médicale* quotes Alison as having obtained good results in the case of general furunculosis by the administration for eight or ten days of from 10 to 15 grains of boric acid a day, divided into two doses. At the same time, four or five times a day, the inflamed areas were washed with a hot solution of boric acid, in the strength of 4 per cent. Between the applications of this lotion compresses were applied to the diseased parts, which had been wet with the same solution of boric acid. In this way he claimed to have been able to relieve the boils which had already formed, and to do much towards preventing other outbreaks. By this means he thinks it possible to avoid surgical intervention.—*Therapeutic Gazette*, February 15, 1893.

ETHYLATE OF SODIUM AS A DERMAL AGENT.—Gamberini and Maroni of Bologne (*Semaine Médicale* and *Journal de Pharmacie et de Chimie*, August 15, 1892; *Revue Internationale de Bibliographie Médicale*, September 25, 1892) have tried this new combination, and found that it exercises a favourable influence in certain forms of cutaneous disease. A 2 per cent. ointment of the salt, in olive oil, produced a cure in a case of psoriasis in the course of twenty days. Good results were obtained in a case of Paget's disease, locally applied in aqueous solution of the strength of 10 per cent; also in the treatment of indolent ulcers of various origin. Curetting followed by the application of dressing with the latter solution produced a cure in two cases of erythematous lupus.—*Therapeutic Gazette*, February 15, 1893.

MEDICAL PERISCOPE.

By Francis Troup, M.D.

Berlin. Klin. Wochensch., No. 4, 1893.—Dr W. Cohnheim of Berlin has been experimenting on healthy cats and rabbits with Theobromine in order to ascertain its diuretic powers. He gave it as Diuretin-Knoll dissolved in a sufficiency of water, and introduced directly into the stomach by means of a catheter through an opening in the œsophagus. He draws the following conclusions:—1. An increase of blood-pressure after exhibition of theobromine was demonstrable. 2. Neither was there any constant effect on the frequency of the pulse. 3. Neither was the energy of the heart's contractions ever affected, as indicated by alteration in the height of the pulse-waves. 4. Given in very large doses, a gradual fall of pressure and of pulse-frequency was observed. 5. Therefore, as no demonstrable operation on the heart and vessels was ever seen when the theobromine was administered in physiological doses, the polyuria which follows its exhibition must be a consequence of direct stimulation of the kidney-elements.

Ibidem, No. 6.—Dr Freyhan states two cases of diabetes in consequence of concretions in the pancreas. Both were complicated with lung tuberculosis. In the first the daily amount of urine passed averaged about two litres; it was free of albumen, and had a specific gravity of about 1024. Titration with Fehling's solution showed about 3·1 per cent. of sugar, and the absolute quantity passed daily oscillated between 60 and 90 grammes. After setting in operation a proper diet this amount fell to 26 to 30 grammes. The tubercular lung-process advanced rapidly, and at the post-mortem the pancreas was found atrophic, much diminished in all its dimensions, of soft and loose consistence, converted almost entirely into fatty tissue, and macroscopically scarcely a trace of its proper parenchyma visible. In the axis of the organ, a much dilated and varicose pancreatic duct packed full of larger and smaller concretions; the varicosities contained, also, a sandy, coarse gravel. The stones had a coarsely-grained, raspberry sort of surface, were friable and soft, of grey-white colour, and consisted of carbonate of lime; phosphoric earths were not demonstrable. The walls of the dilated duct and its side-ramifications were much thickened and patched with inflamed spots. Sections examined microscopically showed hardly any of the proper cells of the organ, and everywhere fatty tissue in place of parenchyma.

The second case, with a daily average of two litres of urine, a specific gravity of 1050, and 8 per cent. of sugar, came also to the obduction-table. In place of the pancreas, a body corresponding with it in form and size was found, but consisting chiefly of fatty and connective tissue; isolated patches of normal parenchyma were found in the head of the organ. Its consistence was soft; in the tail a hard body could be felt, which, when cut down upon, was found to be a concretion of the size of a plum-stone in the ductus pancreaticus, which was dilated, twisted, and filled with gravelly and sandy particles suspended in a mucous fluid; the duct ended in the head in a *cul-de-sac;* on the other side of the stone the duct was completely obliterated. The stone was friable, had a hard nucleus and a softer covering, easily seen on section by difference of colour. Chemically the kernel was found to be carbonate of lime, the outer layer was composed of organic substances, chiefly cholesterine.

The foregoing cases show a curious agreement: in both, diabetes mellitus; in both, concretions in the pancreas, which had led to complete atrophy of the organ; in both, the progress of the diabetes was complicated by a superadded lung tuberculosis. Both are model vouchers for the connexion, not yet fully made out, between diabetes and certain pancreatic affections.

Lanceraux has asserted that the cases of diabetes which had anatomical lesions of the pancreas for their cause possessed certain clinical peculiarities which contradistinguished them from other cases of glycosuria depending on other causes. He describes a sudden accession of the mellituria, a rich excretion of sugar, rapid emaciation, and a relatively short duration of the illness, as symptoms of a pancreatic diabetes. In contrast to this "lean" diabetes he places "fat" diabetes; here emaciation is awanting, the march of the disease is slower, the onset more insidious; the absolute quantity of sugar excreted being also considerably less.

It is still doubtful whether this differentiation is a correct one. Lanceraux and his disciples have, in many publications, attempted to support their theory by the production of much casuistic material; but their communicated observations are not perfectly convincing, because some of the cases, with the clinical characters of the "lean" diabetes, are related, in which on section only a trifling amount of pancreatic disease could be shown.

Our cases, on the whole, correspond to the pattern of the lean diabetes, and yet the sugar-excretion was only very abundant in the second case, and that only in the beginning; on the other hand, rapid course and rapid emaciation were well-marked symptoms. Provisionally, however, we cannot see any absolute grounds for assigning those symptoms to the disease of the pancreas; rather, perhaps, they might be referred to the complicating lung affections, which were also frequently observed concomitants of the Lanceraux cases.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P. Ed., Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; late Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

Investigations on Psoriasis.—Prevalent as psoriasis is, its nature and causation are still obscure. Dr Nielsen of Copenhagen is the latest inquirer, and to some of his results we may direct attention. The earliest clinical phenomenon of the commencing spot is hyperæmia; the production of scales is, on the contrary, a later addition. Besides the very frequent brownish pigmentation, particularly after arsenical treatment, the eruption sometimes, when arsenic or iodide of potassium in large doses has been given, leaves a leucoderma behind, always manifesting itself in minute points, which may, however, be numerous, and may, in individual cases, linger unchanged for months. In 927 cases he found but one limited solely to the palms and soles. He adds that there are in literature but two instances in which, after having been for several years confined to these localities, it spread to the more ordinary situations. A genuine universal affection of the skin, without any sound portion, in psoriasis patients, is only met with in those conditions called exfoliative dermatitis, pityriasis rubra, etc., and these differ clinically so much from psoriasis, that they should certainly be regarded as a dermatitis, often of varied pathogenesis, which complicates psoriasis, and in which it disappears. Such cases, which now and then appear after irritating treatment, seem also to be seen with relative frequency in chronic alcoholics and persons suffering from chronic rheumatic joint diseases. They are rare, but evince a tendency to recur. Speaking of heredity, he says,—" We have as yet no means of deciding that the occurrence of psoriasis in several members of the same family should be ascribed to it, for such can at least be equally well explained by contagion. Sometimes, particularly in certain situations, as the scalp, the forehead, the face, occasionally on the chest and back, the eruption is covered with dirty yellow, fatty scales, though on other parts quite characteristic. The same thing is met with also in syphilis, and is apparently due, and such is Unna's view, to a local combination of psoriasis and seborrhœic eczema." Nielsen then discusses the various opinions held as to the pathogenesis of psoriasis. 1. As the eruption of a constitutional disease or of a special blood infection. Besides other arguments against this, he points out that it has in general the character of a simple skin disease, no implication of the mucous membranes having been noticed, nor any complications which have a direct relation to it. Although some circumstances in support of this view can be brought forward, it does not seem probable that it is a constitutional affection. 2. As a neuropathic disorder. A careful examination of the theories of Polotebnoff and others leads him to the conclusion that it is not likely that the origin of psoriasis is to be sought for in the nervous system. 3. As an idiopathic skin disease. This is the opinion of some of the older authors, who thought it was frequently inherited, or occasionally acquired as a result of diseases which, as infectious ones, produced a deep modification of the skin. A predisposition of the integument was assumed, causing it to react readily to irritants, but of the nature of this predisposition we know nothing, and it is as unsubstantial as the so-called "dartrous diathesis." 4. As a parasitic affection of the skin. This theory, so ably advocated by Lang, is the one which Nielsen regards as the most probable. It is true that the supposed parasite of Lang has been shown, like other supposed parasites, to be of artificial origin, so that at present the micro-organism is unknown, but this does not invalidate the hypothesis. It may be that it belongs to the schizo- rather than to the hyphomycetes, and that, as in lupus, the numbers are scanty. He quotes a series of cases where there was apparently communication by contagion. He points out that disturbances or changes in the nutrition of the skin, which must certainly affect the nutrition provided for the parasite, may explain the disappearance and reappearance of the eruption, and the same may be said of internal remedies acting on the soil. If this view be accepted, the necessity of carrying on the treatment till every trace of the disease has vanished becomes of paramount importance; nay, further, as Bienstock has observed, a subsequent treatment of the whole body with antiparasitic remedies should be employed, and the patient ought to be kept for some time under observation, in order finally to prevent the possibility of fresh infection. The clothes, bed linen, and such toilet articles as spores may cling to, must be disinfected, while the patient must avoid association with other persons affected with psoriasis, unless they have undergone a like course of treatment. Only in this way are cases of psoriasis to be thoroughly cured. —*Monatshefte für praktische Dermatologie*, October 1892.

LUPUS ERYTHEMATOSUS WITH FATAL COMPLICATIONS.—Two such cases have come under Dr Hardaway's observation. Miss K., aged 14, though herself previously healthy, had lost three near relatives from phthisis. She suffered from a typical lupus erythematosus affecting the nose and malar regions, which assumed a darker appearance and a more defined edge in course of a few weeks. Coincidently with the arrest of menstruation in consequence of a chill, her temperature rose, the eruption extended, a honey-like secretion coming out on the nose and cheeks, with purulent discharge from the ear, and death in a fortnight, with symptoms of general septic infection. The disease attacked the ears and extended over the chest. The other case was that of a man aged 23, who had when first seen an acute dermatitis engrafted on a pre-existing lupus erythematosus from the use of a chrysarobin salve. The lupus affected the hands and the dorsum of the feet. He complained of deep boring pains in the limbs, but otherwise seemed well. The lupus persisted after the disappearance of the dermatitis, but as a result of the use of an irritating salve to the face, it became swollen, fever developed, and the glands in the neck became much enlarged. Dark red eruptive spots came out on the forehead, chin, and over the thorax, and blood and pus crusts were to be noted on the cheeks, nose, and ears,—that is, over the regions originally involved,—but after a time the lupus entirely disappeared. The lymphatic gland involvement grew steadily worse, gland after gland became implicated in a tubercular process, and the patient succumbed to hectic and intercurrent pneumonia. Hardaway says that it is quite possible that the various local and systemic disturbances observed in these cases bore no real relation to the erythematous lupus from which the patient was suffering; but having in mind the phenomena described by Kaposi in connexion with the grave form of the disease called by him lupus erythematosus disseminatus, the resemblance seemed to him remarkable in several points. Brocq, basing his opinions on clinical data, divides the affections hitherto grouped under lupus erythematosus into two principal varieties:—1. The centrifugal symmetrical erythemas, or symmetrical wandering lupus erythematosus, the nature of which is still unknown. 2. The fixed lupus erythematosus, which he considers as being varieties of cutaneous tuberculosis. Objectively the cases resembled the latter class, and represented in the beginning the ordinary features of what is usually called lupus erythematosus, although in their after careers they departed widely from this type.—*Journal of Cutaneous and Genito-Urinary Diseases*, July 1892.

THE CAUSE OF PITYRIASIS RUBRA PILARIS.—M. Hallopeau having noticed that this disease affects by preference certain parts, concludes that as the localization of pityriasis rubra pilaris affects specially the sites of election of seborrhœic eczema, one is probably right in connecting it, like this species of eczema, with some disturbance in the evolution and excretion of fatty matters, along with a particular mode of reaction in those attacked. This etiology may furnish indications for treatment. If it is really due to an alteration of the fatty materials, or to their excretion in excessive amount, it seems rational to place such patients on a diet consisting of starch and fat.—*Annales de Dermatologie et de Syphiligraphie*, July 1892.

THE TREATMENT OF ALOPECIA AREATA.—The intractability of any complaint may generally be pretty fairly measured by the multitude of so-called cures suggested. M. P. Raymond thus formulates his for alopecia areata. It is based on two considerations:—1. To oppose the extension of existing patches and the formation of fresh ones. 2. To exercise a parasiticide action on the patches, but above all a strong revulsion, a continued cutaneous stimulation which will awaken the vitality of the hair papilla. From half an inch to an inch round each patch must be shaved, and the hair thereafter kept short. The head is to be washed twice a week with an antiseptic soap; he uses commonly carbolic soap. Every morning the following lotion is rubbed all over the scalp with a painter's stiff brush, especially on the affected parts:—

℞	Hyd. perchlor., . . .	0·5
	Tinct. cantharid., . .	25·0
	Florentine balsam, . .	50·0
	Eau de Cologne, . . .	150·0

In the evening the patches are to be rubbed in a like manner with the undernoted:—

℞	Acidi salicylici, . . .	2·0
	B. naphthol, . . .	10·0
	Acidi acetici glacialis, . .	15·0
	Olei ricini, . . .	100·0

The conditions laid down must be rigidly followed if a successful result is to be hoped for. Nothing more than redness ought to be occasioned. In all cases a fresh growth is visible in the first month of treatment. In two instances it was observed even on the fifteenth day, but in one of these the disease had lasted eight months, in the other eight days, and such are precisely the most favourable circumstances. An alopecia treated from its beginning is cured most easily, and the same may be said of one treated towards the eighth month, a period at which a certain number of cases tend to spontaneous recovery. Complete cure is effected before the end of the second month. In cases of total baldness it is, however, less successful, though it has caused reproduction of hair even in these, though after a proportionally longer time. It should be combined with suitable constitutional measures.—*Annales de Dermatologie et de Syphiligraphie*, July 1892.

THE CAUSATION OF TERTIARY SYPHILIS.—Why in certain cases of syphilis, and not in all manifestations of the disease, appearances which are characterized (as distinct from the secondary eruptions) by the deposition of a syphilitic product, deep in the skin or mucous membranes, in internal organs, in the nervous system, in bones, bloodvessels, or muscles, assuming different macroscopic forms, but agreeing in not tending to resolution, and leave permanent changes, which, as scars or contraction of tissue, lead to consequences more or less serious according to their situation, has been often inquired into. Dr Haslund has once more investigated the question, taking the records of the cases of syphilis treated by him in the Municipal Hospital of Copenhagen during the decennium 1882–92. Altogether these numbered 6364; the proportion of tertiary was 12·4 per cent. It is not possible from the symptoms of the disease to determine beforehand whether tertiary symptoms will be developed or not. But there are conditions in the individual himself which are of the greatest assistance in answering the question. Thus the strength of the virus seems to be of more importance than the nature of the soil into which it is inoculated, but there is no means available for measuring its virulence. The want of a proper course of mercury during the secondary stage of syphilis is the most important and most frequent cause of their appearance. Besides this there are also chronic alcoholism; the co-existence of other chronic or infectious diseases; infection at an advanced age; conditions which diminish the power of resistance of the organism, such as anxiety; infection imported from other latitudes, preceding or following infection of malaria or some other climatic fever; idiosyncrasy or intolerance of the individual to mercury. As a determining cause of the localization, hereditary predisposition has an influence. This is most clearly observed in the nervous system. Traumatism also plays even a greater part than is usually supposed. It is often the exciting cause, the "something" which rouses the virus into activity.—*British Journal of Dermatology*, July 1892.

DISTINCT SPECIES OF TRICOPHYTON IN HUMAN RINGWORM.—An interesting communication on this subject has been made by M Sabouraud. He has found that so far, with scarcely any exceptions, the parasite of ringworm may be one or other of two kinds. In about 65 per cent. the hairs from the head of an affected child, when examined after immersion in liq. potassæ of a strength of 40 per cent., will, so far as diseased, be found to be filled with very fine spores hardly 3 μ in diameter. These are quite in juxtaposition, arranged irregularly, and without discoverable mycelium. They even transgress the covering of the hair so as to furnish it with a sort of external sheath. The patch of ringworm itself presents special characters; it is round or oblong, is not more than two inches in diameter, often less; its surface rises a little above that of the skin around, the derma is thickened and infiltrated. The affected hair is fine, as a rule, and as if atrophied; its fracture is longish. He has named this parasite *Tricophyton microsporon*. In the second variety, which forms about 35 per cent. of the cases, there are large spores lying in a visible mycelium, arranged in distinct lines in the mycelial branches. These branches are all included in the hairs, and do not form an enveloping sheath to them. The chief patch is rather large than small, irregular, and there are at its circumference tufts of healthy hairs encroaching on the diseased. The patch itself is very bald, since the hairs break off very short. They are rather swollen than atrophied, often no more than a black point at the follicular orifice. Formulated shortly, if the hairs are thick and their fracture a short one, the spores are large, from 7–8 μ in diameter; if the hairs are fine and their fracture long, the spores are small, and have a diameter of 3 μ. The variety with large spores he has named *Tricophyton macrosporon*. There is a close relationship between the obstinacy of the ringworm and the T. microsporon; in twenty cases the macrosporon was only found once, but it alone has been met with in tinea barbæ and in ringworm of non-hairy parts. According to Sabouraud's observations, if the macrosporon be found in the hairs of an affected child, the case may be pronounced curable in three to four months, not so if the microsporon be encountered; such cases are the intractable ones. Some exceptional cases were seen with parasites not completely conforming to the characters described; such were apparently instances of infection from animals.—*Annales de Dermatologie et de Syphiligraphie*, November 1892; *British Journal of Dermatology*, January 1893.

PERISCOPE OF OBSTETRICS AND GYNÆCOLOGY.

By J. W. Ballantyne, M.D., F.R.C.P. Ed., F.R.S.E., Lecturer on Diseases of Infancy and Childhood, and on Midwifery and Gynæcology, School of Medicine, Edinburgh.

Inversion of the Uterus in a Woman of Seventy-eight.—F. Schauta records this extraordinary case. The patient, seventy-eight years of age, had noticed for more than a year that a tumour protruded from her vulva. At first it was small in size and disappeared during the night, later she had to replace it herself, and she had suffered from pains in the back and abdomen, and from a red vaginal discharge. There had also been some difficulty in micturition. She had had one child when twenty years old, and the menopause had occurred when she was forty-eight. The vulvar tumour was found to consist of a completely inverted uterus with a fibroid attached to it. The openings of the Fallopian tubes were clearly seen. The myoma was removed in the hope that then a pessary and tampons might keep the uterus in position; but these means failing, the uterus also was removed. The causes of the inversion, according to the author, were the presence of the myoma in utero, the fact that the woman had to stand for many hours daily, chronic constipation, and the atrophic state of the uterus and the inflammatory infiltration of its walls.—*Archiv für Gynækologie*, Bd. xliii., Heft 1, 1892.

A Case of Blenorrhœa Neonatorum Gonorrhoica contracted in Utero.—Dr O. Feis gives an account of a case in which a woman, thirty-five years old and a xii.-para, who had suffered from gonorrhœa which was now latent, gave birth to a female infant that showed evident signs of ophthalmia neonatorum. The eyelids were red and swollen, a yellowish discharge exuded from the eyes, and the conjunctiva was considerably swollen. Fifty-four hours had elapsed between the rupture of the membranes and the birth of the child; there had not been much liquor amnii present;

and it had been noted that when a finger was passed into the cervical canal and withdrawn again it was coated with a thin greenish-yellow fluid. The disease ran its usual course, was treated with boracic acid lotion (2 per cent.), and ultimately the eyes got well. During the inflammatory stage numerous gonococci were found in the pus cells of the discharge. The writer alludes to somewhat similar cases recorded by Magnus, Nieden, Galezowski, and Hirschberg.—*Centralblatt für Gynäkologie*, No. 45, 1892.

THE RELATIONS BETWEEN MENSTRUATION AND THE WEIGHT OF THE FŒTUS AT TERM.—Dr Gustav Lang, after noting the researches of Negri, Cuzzi, and Marcus Rey upon the relations of the date of commencement of the menstrual flow in the mother and the weight of the infant, gives some personal observations, and places the results in the form of tracings. He concludes that one cannot say that, in general and in an absolute manner, women who menstruated early had infants with an average weight greater than that of the offspring of mothers who first menstruated late. He is further of opinion that the weight seems to depend upon the climate (other things, such as race, profession, etc., being equal); and that women who menstruate early give birth to infants with an average weight, greater in hot countries, less in cold countries, than that of the children of mothers who menstruate late.—*Archives de Tocologie*, October 1892.

THE FORMATION OF URETERIC FISTULÆ IN CANCER OF THE UTERUS.—In the case of a woman with cancer of uterus who had passed no urine for eight days, and who showed œdema of the eyelids, face, and lower limbs, Dr Jaboulay diagnosed cancerous invasion and obstruction of the ureters, with distension above the site of occlusion. He made an incision in the left lumbar region, opened into the ureter, from which a jet of urine issued, and fixed it to the skin surface. Some improvement took place, but it was found necessary later to perform the same operation on the right side. The patient died from double nephritis, which may be ascribed to the operation and to predisposition to inflammation in the organs themselves. Notwithstanding the fatal result, the author thinks that the operation is indicated in such cases just as is opening the trachea for obstruction in the larynx, or the stomach for stenosis of the œsophagus. The opening should be made in the lumbar region, strict antiseptic precautions should be followed out, and it is probably advisable not to place a drain in the lumen of the ureter.—*Archives de Tocologie*, November 1892.

THE USE OF FORCEPS, ESPECIALLY THE AXIS-TRACTION FORCEPS. —In a paper with the above title Dr William Nagel gives an account of his personal experience with the forceps of Tarnier, Breus, and A. R. Simpson, and it is gratifying to Edinburgh obstetricians to find the statement that he prefers "the last mentioned." He says:—"A. R. Simpson's axis-tractor, made in a light and convenient form, fulfils in every particular the rules laid down by Tarnier; it is 6 cms. shorter than Tarnier's, but its length suffices completely for the grasping of the head within or above the inlet of the pelvis. Furthermore, it possesses a large curvature for head like that of the old Simpson forceps, and this I consider valuable when one attempts to get hold of a head in a high position and in an unfavourable diameter. Notwithstanding all these advantages, A. R. Simpson's forceps has yet a certain degree of complexity, to which, however, one can easily become accustomed, and my observations have proved that it can be kept aseptic in spite of its numerous joints." He used the axis-traction forceps in twenty-nine cases of high position of the head, and in twenty-seven of these the A. R. Simpson instrument was the one chosen. He concludes that the axis-traction forceps are productive of most satisfactory results in cases in which the condition of the mother demands a termination of labour, if associated therewith the head of the child has been engaged in the pelvic inlet for a long period, and if the product of conception is living. As far as the child is concerned it is a comparatively dangerous instrument; but even though a certain percentage of infants succumb to the injuries received, it is certainly preferable to give them the benefit of the chance offered by the axis-traction forceps in such difficult labours than to resort to perforation, which is the only other mode of delivery. Dr Nagel does not, however, say anything in this relation concerning the sphere of the recently revived symphysiotomy operation.—*International Medical Magazine*, November 1892.

PERIODICAL INTERMENSTRUAL PAIN.—Dr Chauncey D. Palmer gives the clinical history of three cases of periodical intermenstrual pain. Generally about the middle of the intermenstrual period there were attacks of pelvic pain located in either ovarian region, sometimes on one, again on the opposite side. These pains were irregular in severity and duration (usually short), were generally but not always intermittent, came on at night as well as during the day, continued from two to nine days, were uninfluenced by motions of the body, and were unattended by any of the febrile phenomena. The author concludes that the disease is ovarian, not uterine; that it is of the nature of an oophoritis or peri-oophoritis, or both; that the chief underlying exciting cause of these attacks of pain is the morbid obstruction to the extrusion of the contents of the Graafian follicles; that many other morbid conditions—uterine, peri-uterine, or ovarian—may be associated with the oophoritis or peri-oophoritis, but their presence is not the cause of the essential symptoms; and that cure is only effected by overcoming the disease of the ovary or by its extirpation.—*American Journal of Obstetrics*, October 1892.

THE RELATION OF PELVIC DISEASE AND PSYCHICAL DISTURBANCE IN WOMEN.—Dr George H. Rohé gives the record of eighteen interesting cases of mental disorder with concomitant pelvic lesions:

six were instances of melancholia, one of simple mania, one of hysterical mania, two of periodic mania, one of hystero-epilepsy, and three of epilepsy. In all the melancholia cases marked improvement followed the removal of the ovaries and tubes; the same result followed in the simple mania case; of the four puerperal patients, in two the symptoms became much less offensive and dangerous, and in two there was complete recovery; the case of hysterical mania improved at first, but ultimately there was a relapse in the mental condition; in both the periodic mania patients there was some mental change for the better; the hystero-epilepsy case showed a complete cure; and, finally, in one of the epileptic patients improvement followed, whilst in the remaining two death occurred, probably from sepsis. The author believes that the facts recorded demonstrate that there is a fruitful field for gynæcological work among insane women; that the work is as practicable, and can be pursued with as much success, in an insane hospital as elsewhere; and that the results obtained not only encourage us to continue, but require us, in the name of science and humanity, to give to an insane woman the same chance of relief from diseases of the ovaries and uterus that a sane woman has.—*American Journal of Obstetrics*, November 1892.

A CASE OF SYMPHYSIOTOMY.—To Dr Charles Jewett belongs the credit of having been the first to perform symphysiotomy in America. The operation took place on September 30th. The patient was a i.-para, and delay occurred from transverse narrowing of the bis-ischial diameter. Forceps were tried, but without success, and symphysiotomy was then recommended, and carried out in preference to craniotomy. After the division of the symphysis the head was easily shelled out by the fingers in the rectum and powerful suprapubic pressure. The child was resuscitated, but died at the end of twenty-four hours from cerebral injuries due to the long-continued pressure. The mother recovered well.—*Brooklyn Medical Journal*, November 1892.

SYMPHYSIOTOMY, WITH THE REPORT OF AN OPERATION.—Three days after the case just abstracted occurred, namely, on October 3rd, Dr B. C. Hirst performed the second symphysiotomy that has taken place in America. The patient, a i.-para, had a conjugata vera of 7¾ cms. The mother and child did well.—*Medical News*, October 15th, 1892.

PERISCOPE OF SYPHILIS AND GENITO-URINARY DISEASES.

By FRANCIS CADELL, F.R.C.S. Ed.

CHANCRE OF THE MOUTH.—In the *Medical Record*, October 1, 1892, there is a paper by Dr Harrison Griffin, with statistics and a report of twelve cases, three occurring in children in one family. In 1200 cases of syphilis the primary chancre was situated in the region of the mouth in twelve cases.

Case I.—Male, aged 9, had chancre of the lower lip slightly to the right. He had painful enlargement of cervical and submaxillary glands on the right side; also on left side, but not so marked. Induration not to the same extent as is usually found when the sore is on the penis. A papular eruption appeared on the body soon after. The lad had received the infection by fetching beer for labourers in a pail, and occasionally drinking after a workman who was syphilitic. The boy's father was warned to supply him with a separate towel, glass, cup, etc., and to let him sleep alone; above all, not to let him kiss anyone. He was also removed from school.

Case II.—A brother of the previous patient, aged 12, was sometime after found to have a chancre on the right tonsil. The inoculation took place through a stick of candy that the elder brother had put in his mouth after the younger brother had sucked it. The history of the eruption is entirely at variance with the time that usually elapses between the presence of the chancre and the ingress of the eruption in the adult life. In the first case the eruption came out ten to twelve days after the presence of the chancre, in the second case thirteen days after the initial lesion.

Case III.—Sister of above cases, contracted a chancre of upper lip by kissing her brother. The eruption appeared about twenty-six days after the initial lesion.

Case IV.—Male, aged 8, had sore on right tonsil, with enlarged neighbouring glands. He had contracted it from impure practices. The history of this case was very decisive.

Case V.—Female, actress, aged 24, with chancre of the lip. She made-up for the stage in the same room with another actress, who was found afterwards to be syphilitic. The medium of contagion was supposed to be the rouge-pot.

Case VI.—Female, aged 18, contracted a chancre of the lip by kissing. There was eruption on the skin and enlargement of the glands.

Case VII.—Female, aged 23, with chancre of lip. Infected by her syphilitic husband.

Case VIII.—Male, aged 42, chancre on upper lip. Drinking whisky from a bottle after some friends, one of whom was syphilitic, was the mode of contagion.

Case IX.—Male, aged 28; mucous patches at tip and side of tongue, and also covering inside of lower lip. He had been married six weeks, although he knew he was suffering from syphilis. He was forbidden to kiss his wife. Three weeks later his wife was found to be infected with a chancre on the under portion of the tongue. She suffered from an extensive tubercular eruption; large ulcerative spots covered her back and breast; it was a case of malignant syphilis.

Case X.—Female, married, aged 28, chancre of upper lip. Contagion through kissing syphilitic husband.

Case XI.—Male, married, aged 30; contracted chancre from prostitute. Inoculated his wife with chancre of the lip.

Case XII.—Female, cook, aged 20; caught sore on lip by kissing her lover, who was suffering from mucous patches of the lips and tongue. On account of its early diagnosis, the disease was not transmitted to the young children of the family.

Considering how readily the mucous patch of the mouth will inoculate a chancre, it seems strange that there are not more cases reported of the primary lesion occurring in this locality.

RECENT ADVANCES IN THE SURGERY OF THE URINARY ORGANS. —A paper with this title appeared in the *Glasgow Medical Journal*, September 1892, by Dr Nicoll. He treats the subject under three heads,—Gonorrhœa, Gleet, and Stricture.

Gonorrhœa.—In the acute stage of this disease the only portion of the treatment used ten years ago which holds its ground is the alkaline diuretic. Cubebs, copaiba, etc., are considered dangerous remedies, except in gleet. The treatment recommended is by the iodoform and eucalyptus bougies introduced by Mr Watson Cheyne, which will in many cases cure gonorrhœa in from three to six days, or even less. With the help of a 2 to 4 per cent. cocaine ointment the bougie is inserted, and the patient lies down for "an hour or two." After the bougie has been absorbed or expelled, the patient douches his urethra with some bland antiseptic lotion for ten or twenty minutes, and this treatment is repeated twice daily, or oftener, if the patient lies up.

Gleet.—The causes of this discharge having been recognised by the use of an inflating urethroscope, astringent applications are applied to the patches of granular urethritis. Large steel bougies are also recommended to be passed.

Stricture.—When the calibre of a stricture is less than that of a No. 5 bougie, English gauge, flexible instruments are considered to be safer than metallic ones. Baug's whalebone bougies are the most universally serviceable.

CEREBRAL SYPHILIS.—In the *American Practitioner and News*, January 14, 1893, Dr J. E. Hays has notes of two cases of cerebral syphilis. An interesting feature of each case is the wide interval of apparent cure of the secondary symptoms and the beginning of the cerebral disturbance.

Case I.—Mr P., aged 46. On Feb. 1, 1892, his left arm and leg were completely paralyzed, power of speech slightly impaired, and there was difficulty in swallowing. The attack had been sudden, without loss of consciousness. At the age of 26 he contracted syphilis. The nature of the treatment followed was not known. Under the use of iodide of potassium, gradually increased to forty grains three times a day, he steadily improved for the first two months. He could walk, but his arm remained nearly powerless. On April 6th he had an attack of pleurisy, followed by bronchitis, from which he did not recover until September. Lately he has resumed his work at a factory.

Case II.—Mr J., aged 42. A somewhat similar case. He contracted syphilis eighteen years ago. He married, and has a son living, aged 15, whose upper central incisors are notched. He remained well until last May. Symptoms of vertigo then came on, and soon became well marked and persistent. On 2nd June hemiplegia occurred. No loss of consciousness, sensation, or intellectual power; he could articulate distinctly, but talked slowly and with some effort; vision acute. He was put on a mixed treatment of iodide of potassium and mercury. His progress towards recovery was rapid; he gained twenty pounds, and could walk some distance. He had but little use of his arm, and would probably never be able to resume work.

PROSTATITIS FROM CYCLING.—A great many bogeys have been started in respect of the now prevalent habit of cycling, few of which have any foundation in fact. It is, however, quite conceivable that the pressure on the perinæum by ill-constructed, inelastic saddles, especially on rigid-frame machines, may, in a certain proportion of cyclists, and particularly those whom a hard fate obliges to ride their hobby in districts with bad roads, determine prostatitis and various forms of urethral irritation. Dr Irwin, of Louisville, recently reported five cases of prostatitis that had come under his notice, the cause of which could be distinctly traced to the pressure by the saddle of the bicycle on the prostate gland. Four of the patients were past middle age, but the other was a boy. The symptoms commenced after riding the machine for a few hours. The act of micturition was accompanied with a feeling as though the vesical end of the urethra was raw. Inordinate and persistent priapism followed, coming on at short intervals, and lasting three or four days. Some dull pain was felt in the testes. There was no discharge from the urethra at first, but after two or three days a little moisture would ooze out of the meatus urinarius. The discharge was thin and colourless. In certain cases of vesical irritation attributed to cycling observed by ourselves, the symptoms—never, indeed, very severe—appeared to be due to retention of small quantities of urine highly charged with salts for inordinately long periods of time, the proportion of water having been diminished by profuse perspiration.—*Medical Press*, February 8, 1893.

Part Fifth.

MEDICAL NEWS.

AMONGST those upon whom the Senatus Academicus of the University of Aberdeen have decided to confer the degree of LL.D. we observe the names of two members of the medical profession,—Dr Crum Brown, Professor of Chemistry in the University of Edinburgh, and Sir Frederic Bateman, M.D., F.R.C.P., Senior Physician to the Norfolk and Norwich Hospital.

A NEW LARYNGOLOGICAL SOCIETY.—At a meeting held recently in London, it was unanimously resolved to form a Society for the promotion of the science and practice of Laryngology under the name of the "Laryngological Society of London." The list of over thirty original members includes nearly all the most prominent physicians and surgeons who are or have been identified with special throat departments, both in London and the Provinces. Among the original promoters, and representing Scottish Laryngology, are Dr P. M'Bride and Dr R. M'Kenzie Johnston of Edinburgh, and Dr D. Newman of Glasgow. It is expected that Sir George Johnson, F.R.S., will be invited to be the first President of the new Society.

INSTITUTE OF CHEMISTRY.—The annual General Meeting of the Institute of Chemistry of Great Britain and Ireland was held on March 1st at 30 Bloomsbury Square, London, W.C., the premises recently acquired by the Institute. The report of Council and balance sheet for 1892 having been presented and approved, the Council and Officers for the ensuing year were elected, and the President, Dr William A. Tilden, F.R.S., delivered an address, in which, after referring to the satisfactory progress which had been made by the Institute during the past year, he proceeded to explain the new curriculum recently adopted by the Council for the training and examination of Associates, and the proposals which had been brought forward by the Censors with the object of regulating the professional conduct of members of the Institute. The numbers on the register now are 826 members and 109 students, as compared with 823 members and 34 students at the date of the last annual General Meeting.

IN the *Journal of the American Medical Association* (vol. xx., No. 4) Dr Ashmead has an interesting paper on "The Absence of Cow's Milk from Japan: its Beneficial Consequences." He believes that the absence of rickets is due to the fact that the children are nursed by their mothers, and that this natural milk always remains the *plat de résistance* for the first six years of life. Artificial lactation is altogether unknown; and the author says that the Japanese mothers are the most perfect, the most successful *Almæ Maters* in the world. The author also refers to another interesting point. A Japanese woman, as by an instinct, never kisses her child on the lips, because the Japanese *know* that the kiss is a carrier of tuberculosis and syphilis. He also believes that "total abstinence from cold water—an inverted teetotalism—has been the salvation of Japan. Water is only drunk boiled with tea; the boiling kills the typhoid germs and the eggs of the distoma."

THE WORLD'S COLUMBIAN EXPOSITION.—In connexion with the World's Fair at Chicago there are to be various Congresses, and the Hygienic Congress and Exhibition will probably be of high value. We have received a prospectus of this department. The aims are high, and we hope there will be a good representation from this country.

"THE BLOT ON THE BRAIN."—We have much pleasure in announcing that the author of this interesting work, Dr W. W. Ireland, has a new and improved edition of it in preparation, which will likely appear in the autumn.

"DUNNING" FULLER'S EARTH—A CORRECTION AND A POSTSCRIPT. —We find we have been inadvertently led into a misstatement as to a point in connexion with this. It was not Sir Alfred Garrod, but Dr John Clarke, late of Hertford Street, London, who, when visiting at Duncrub, became interested in the fuller's earth, and introduced it to the notice of the late Dr Percy, the eminent metallurgist, for his analysis and report, though Sir Alfred Garrod was consulted as to its utility. We are glad, at the same time, to have this opportunity of amending and amplifying our previous notice, as since it was penned we have had the advantage of seeing the deposit itself *in situ*, and of personally inspecting the whole method of preparation, which is an elaborate and most complete one, much of its perfection being due to processes introduced by the Hon. Bernard Rollo. After various manipulations the earth remains entirely free from any mechanical or accidental impurities, and in the powdered form a degree of division is reached which it certainly seems difficult to exceed, it being then of a delicate flesh tint, and in the soft impalpable state in which it is ready for use. In addition to the applications which we formerly indicated, it acts as a splendid natural soap when employed with warm water for washing. This saponaceous property is perhaps due to the presence of some steatite, as over and below the earth is a vein of fine serpentine marble, itself a kind of steatite. In the earth, too, pieces of chalcedony occur, while agate and onyx are found in immediate proximity; indeed, in the valley there are a number of rare minerals, such as are not often met with, associated. Contrasted with other samples of fuller's earth, this, so far as our opportunities have enabled us to decide, is incomparably finer, more soothing, more absorbent, and last, not least, more pleasant to the eye.

"BRAND & CO.'S MEAT JUICE."—We have received from the Manufacturers a sample of this new preparation, and can highly recommend it, not only as being most nutritious, but also as being exceedingly pleasant to take. Children take it with a relish.

LIQUOR CARNIS (CAFFYN).—We have received from the Liquor Carnis Co. a sample of this preparation, made at their works near Aylesbury. This, too, is an excellent preparation. It may be obtained in imperial pint bottles, which is convenient for hospital practice, and is a preparation which improves on exposure to the air. It is one which we can highly recommend.

OIL OF EUCALYPTUS GLOBULUS.—We have received from "The Tasmanian Eucalyptus Oil Company" a sample of their Oil of Eucalyptus Globulus. This sample is exceedingly pure, and one which we can very highly recommend. The Oil of Eucalyptus is well known as a most valuable therapeutic agent.

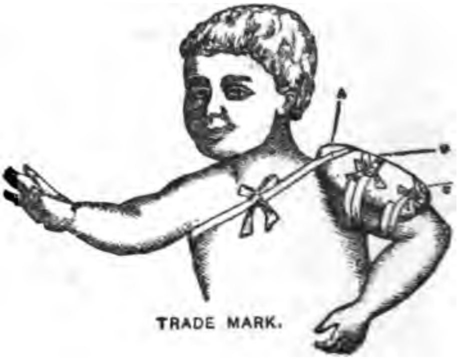
"HYGIAMA" (DR THEINHARDT'S).—We have received from Sörensen & Co., London, a sample of Hygiama, a dietetic food now much used in Germany. It is principally made from wheat and cocoa, mixed with other ingredients. It is very rich in nitrogenous principles, and is likely to prove a valuable dietetic.

AGATHIN.—Burroughs, Wellcome, & Co. have sent us a sample of this substance. It is a white powder, minutely crystalline, and odourless and tasteless. Chemically it is salicyl—*a*—methyl-phenylhydrazon. It is strongly recommended in rheumatism, neuralgia, and allied affections. The dose is 4 to 8 grains three times a day.

REID & CARNRICK'S PREPARATIONS.—We have received from Reid & Carnrick, of New York, through F. Newbery & Sons, London, specimens of several of their preparations, specially Kumysgen, Lacto-cereal Food, Lacto-preparata, Zymocide, etc., and find them valuable and reliable preparations. The Kumysgen is a preparation of koumiss in the dry state, and requires only the addition of water to prepare it. This is sure to become a favourite with the profession, and is one we can highly recommend.

ARMOUR & CO.'S PREPARATIONS.—We have received specimens of various preparations from Armour & Co., Chicago, U.S.A., including their "Extract of Meat," pills and tablets of Pancreatin, Pepsin, etc., and find them excellent preparations. Their Extract of Meat is specially good.

HARTMANN'S WOOD-WOOL VACCINATION PAD.—These are pads which we can confidently recommend. They protect the arm, absorb discharge, and so prevent the risk of blood-poisoning. The accompanying woodcut represents the pad much enlarged. They may be obtained from any chemist.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Part First.

ORIGINAL COMMUNICATIONS.

I.—THE CLINICAL FEATURES OF MYXŒDEMA.

By Byrom Bramwell, M.D., F.R.C.P. Ed., Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis, School of Medicine, Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh at the Discussion on Myxœdema, 15th February 1893.)

In introducing this part of the subject, Dr Byrom Bramwell said:—When, Sir, our Secretary was kind enough to ask me, in the name of the Council of the Society, to give a description of the clinical features of myxœdema, I had some hesitation in agreeing to the request, for I felt that I had little to say which was not already well known to the members of the Society, most of whom have doubtless had opportunities of seeing and studying the disease. And this leads me to say that a remarkable feature connected with myxœdema is its great frequency in this part of the country. I suppose there cannot be less than twenty-five or thirty cases of myxœdema and sporadic cretinism in Edinburgh at the present time.[1] I have at present four cases under my care in the Infirmary, and during the past two months I have seen other four cases in consultation in private practice. From a statement made to me recently by a medical friend in Dundee, it would appear that myxœdema is quite as prevalent in that city as in Edinburgh; and the disease is comparatively common (probably quite as common as it is in Edinburgh) in the North of England.

It is difficult to account for this remarkable prevalence of the disease in this neighbourhood, unless by some endemic, telluric, or climatic condition; possibly the cold and damp (particularly the damp) of our climate predispose to the production of the disease. It seems necessary to suppose some such local predisposing or exciting cause; for otherwise it is exceedingly difficult to account for the fact that in some parts of the world the disease seems extremely rare, while it is, comparatively speaking, so common here. Professor Hoffmann of Berlin, who was recently in the Infirmary, and to whom I was showing a case of acromegaly and the cases of myxœdema which I have under treatment, told me that myxœdema is extremely rare in some parts of Germany. In Heidelberg, where he lives, he has only seen one case. At the same time he stated that within the past few years he had seen eight cases of acromegaly,—all, with one or two exceptions, collected from a radius of within twenty miles round Heidelberg. Now, acromegaly, which seems to have some relationship with myxœdema, is undoubtedly very rare in this country, although probably more common than is usually supposed. In some parts of America, too, myxœdema seems to be very rare. A gentleman who is present this evening—Dr Mackenzie of Cincinnati—tells me that he has never seen a case either in private or hospital practice, and he is physician to a hospital containing more than four hundred beds. Dr Mackenzie does not think that any case has ever been met with in Cincinnati.

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[1] Dr John Thomson and I have both independently been struck by the fact that myxœdema and sporadic cretinism are especially prevalent in a particular district of Edinburgh. We are at present collecting facts with regard to this question, and will be greatly obliged if members of the Society who have had, or who now have, any cases of myxœdema or sporadic cretinism under observation will give us full details as to the residence of the patients, and especially as to the locality in which the patients were living—(1) at the time when the disease commenced, and (2) before the first symptoms were noticed.

The clinical features of myxœdema are now so well known and so very striking, that it is impossible to mistake the condition when it is fully developed. Different cases of the disease, as I have elsewhere pointed out, bear a very striking resemblance to one another. This was very well illustrated in a case which I have at present under treatment in the hospital. One day I took my son, a second year's medical student, into my ward and showed him this case of myxœdema. He had never been in a medical ward before. I had not, of course, told him anything about the case; further, he did not know that there was any case of myxœdema in the ward; and yet, when I put the case before him and asked him what it was, he at once recognised it by its resemblance to the plates in my *Atlas*. It is a very remarkable fact that a disease with such striking features and peculiarities has only been recognised as a distinct clinical entity since the year 1873. As I have elsewhere remarked, the disease must, however, have been known to many physicians before that date. When I entered practice in the year 1869, my father showed me a typical case of the disease, and pointed out its peculiarities to me.[1]

Myxœdema is essentially a disease of the middle and later life, and of middle-aged and old women, for it occurs much more frequently in women than in men. It is more common, too, in women who have borne large families than in the unmarried. But as everybody knows, it is by no means confined to females and to adults. It not unfrequently occurs in men as well as in women, and it may develop at any age. There is no doubt that the curious condition termed sporadic cretinism is the infantile form of myxœdema.

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[1] Since the discussion on myxœdema, I have learned from Dr Ireland of Prestonpans, that in the year 1854 he was called to attend the landlady of a friend, a medical student in Edinburgh, who was suffering from the disease. On looking back to that case, which proved fatal a year after he first saw her, he distinctly remembers that all the striking peculiarities of the disease were well marked; when attending this patient he recognised that the disease was peculiar, and that it did not conform to any known form of dropsy.

I may remark, in passing, that when myxœdema does occur in young women or young men the facial appearance of the patient is often not quite characteristic. The pink blush on the cheeks, which is such a very striking feature of the disease in older people, is often entirely absent.

In describing the clinical features of myxœdema it may, perhaps, be interesting to refer, as I go on, to two diseases which have some relationship with myxœdema,—namely, exophthalmic goitre and acromegaly,—and to detail the points of contrast and resemblance between them. As everybody knows, the thyroid gland is atrophied or absent in myxœdema and sporadic cretinism; whereas it is enlarged and hypertrophied in exophthalmic goitre. In acromegaly, on the other hand, the pituitary body is usually enlarged, while the thyroid gland is sometimes also affected; and it is very interesting to note that there seems to be some sort of complementary relationship between the thyroid and the pituitary, for one of the most important pathological facts which has recently been observed in connexion with myxœdema is the circumstance that in many, perhaps in all cases, the pituitary body is notably increased in size.

In the case which is represented in this Diagram, and which is one of the cases of myxœdema which I have recorded in my *Atlas*, the pituitary body was markedly increased in size. Through the kindness of Dr John Thomson I had the opportunity of making a post-mortem examination in this case some ten days ago. I shall not, however, detain you by referring either to the clinical or pathological features of that case, which is one of great interest, for Dr John Thomson intends, I believe, to lay a note of the condition before you at our meeting to-morrow.

Exophthalmic goitre, like myxœdema, is very much more common in women than in men; but it differs from myxœdema inasmuch as it very generally occurs in young women. Acromegaly, too, almost invariably develops in young adults. It seems equally common in the two sexes.

The onset of myxœdema is usually very slow and insidious. It is quite exceptional to find the symptoms developing rapidly; in those cases in which the disease appears to develop more rapidly than usual, it is highly probable, I think, that it has existed in an unrecognised form for some time previously.

An increased susceptibility to cold, inability to perspire, a feeling of lassitude and repugnance to exertion, both of body and mind, are, so far as my observation enables me to judge, usually the first symptoms of the disease.

As the condition goes on, a striking change takes place in the appearance of the patient; and when the disease is fully developed, the physiognomy is highly characteristic. There is an increase in bulk of the whole of the body,—the face, trunk, and limbs all being affected. This increase is due to a solid œdema, which does not pit on pressure like an ordinary dropsical swelling. The increased bulk of the body as a whole, and the swelling of the individual parts, are essentially due to this œdema,—to an enlargement of the soft parts rather than of the bones and joints. In this respect myxœdema contrasts in a remarkable way with acromegaly. In that disease the bones and cartilages, more particularly the bones of the extremities (hands, feet, nose, etc.), are enlarged, as well as the soft parts; for in acromegaly the soft tissues are also notably implicated.

I may say, in passing, that one of the most remarkable results which follows thyroid feeding, or the hypodermic injection of an extract of thyroid gland, in cases of myxœdema is loss of weight and bulk. One of the cases which I have had under treatment recently, and in which a complete cure, so far as the symptoms are concerned, has taken place, lost a stone and a half in a week or ten days.

In fully developed cases of myxœdema the face is full, coarse, bloated-looking, and round; it has been termed "moon-shaped." In this respect there is another striking difference between myxœdema and acromegaly. In both diseases the soft parts of the face may be full and swollen,—the nose and lips, for example, being markedly thickened and enlarged in both diseases; but in acromegaly the face is elongated and oval instead of round and moon-shaped.

The swelling of the lips is usually a striking feature of myxœdema. The lower lip especially is full, and feels firm, tense, and elastic. It resembles more or less closely in feel a piece of india-rubber. This elastic swelling very quickly subsides under treatment. In the course of a week or ten days I have seen the lower lip become quite soft and flaccid.

The nose is broad and coarse-looking. The eyelids are usually markedly affected. There is often a baggy, dropsical-looking swelling beneath the lower lid, which at first sight is suggestive of Bright's disease. The upper lid in many cases droops over the eyeball; and in order to prevent the loss of sight which is occasioned by this drooping of the upper lid, there is often a compensatory elevation of the eyebrows, due to a permanent contraction of the occipito-frontalis muscle. The skin of the eyelids is usually soft, translucent, and waxy-looking.

As I have just stated, the appearance of the eyelids and the swollen condition of the face are highly suggestive of Bright's disease; and there is no doubt that, before the clinical features of myxœdema were known and recognised, cases of myxœdema were often put down as cases of kidney disease. But on closer scrutiny, the facial appearance is very different from that of kidney disease.

In typical cases of myxœdema a pink blush is present on each cheek. In some cases the blush is not confined to the cheek; in some cases, as in that which is represented in this Drawing, it involves the nose. The colour of the face, too, is usually different from that of Bright's disease. The skin has a yellow, tawny tinge, quite different from the pallor which is such a striking feature in those cases of Bright's disease in which the face is much swollen; while the baldness, or the thin, dry, harsh condition of the hair, the dirty brown encrustation of the scalp, and the thinness or absence of the eyebrows, which are such important characteristics of myxœdema, are absent in Bright's disease.

The tawny, yellow discoloration of the skin is chiefly seen on those parts of the body which are exposed to the atmosphere. This discoloration may persist after the œdema has completely disappeared under treatment. I hope to show you to-morrow a patient who has been cured by thyroid feeding. In her case the yellow discoloration of the face persists. It contrasts very remarkably with the whiteness of the scalp, and is seen to be limited to the parts of the skin exposed to the light; for the skin under the ears is quite white, while the adjacent skin of the neck and face is markedly yellow.

I have now referred to the more important changes which myxœdema produces in the face. The alterations which occur in the other parts of the body are no less striking and characteristic. The tongue is usually large and swollen; the buccal mucous membrane, the fauces, pharynx, and larynx are in many cases also œdematous. The swelling of the soft parts of the back of the mouth may be so considerable that the patient may experience considerable difficulty in swallowing. The hands are markedly enlarged and broad—"spade-like," as it has been termed. The feet present the same changes. The abdomen is usually full and large, and the trunk, as a whole, looks markedly increased in size. Puffy, elastic swellings, which are usually, it is said, the result of localized collections of fat, are sometimes seen at the root of the neck above the clavicles. In the patient whose case is beautifully represented in the water-colour Drawing which I shall now pass round, these supra-clavicular swellings were more marked than in any other case of adult myxœdema which has come under my own observation. In children affected with myxœdema (sporadic cretinism) the elastic subclavicular swellings are much more constant than in adults.

In patients affected with myxœdema and sporadic cretinism, although the neck is usually short, thick, and swollen, the rings of the trachea can usually be very distinctly felt, and in the great majority of cases no evidence of the thyroid can be detected during life. This is just what we would expect, for in the great majority of cases of the disease the gland is markedly atrophied, while in the juvenile form of the disease it may be altogether absent. In those exceptional cases in which the thyroid is present or enlarged the structure is altered and destroyed,—in other words, it is functionally inert.

Let me here say, in passing, that it is very difficult to determine by palpation during life whether the thyroid is actually present or not. This difficulty was well brought out in the post-mortem examination which I made in conjunction with Dr Thomson the other day; in that case, even after deflecting the skin of the neck, we were unable to feel the thyroid, but on further dissection we found that the gland was present. At the first glance it looked of normal size; its superficial extent was quite equal to that of a normal thyroid, but it was so soft and flabby, and so closely applied to each side of the trachea, that it was difficult to feel it; even after the skin had been deflected, it could not be differentiated by palpation from the trachea, with which it lay in close contact.

Such are the gross alterations and the more striking changes in the physiognomy which myxœdema produces in its advanced and fully developed stage.

When we come to study the condition more minutely we find evidence of profound alteration in the nutrition of the skin and its appendages, and in the functional activity of the nervous apparatus. The skin is dry, harsh, and rough. The total absence of sweating is a very striking feature in the great majority of cases. Flat moles are sometimes developed on the surface of the body. The hair becomes dry, harsh, and thin. In many cases the eyebrows are entirely wanting; in the advanced stages of the disease the scalp may be almost entirely bald, but whether this is so or not, it is usually covered with dirty brown crusts. This condition is, I think, one of the most striking features of the disease, and of great diagnostic importance. It is often possible to diagnose myxœdema merely by looking at the back of the neck and scalp. The thin, ragged, dry condition of the hair, the shrivelled, yellow, wrinkled appearance of the skin of the back of the neck, and the dirty brown scales or crusts on the scalp, have enabled me in several cases to recognise the disease before I had the opportunity of looking at the face. The nails often become dry and brittle, and the teeth not infrequently drop out or become carious.

I may say, in passing, that, under the influence of thyroid feeding, the production of sweating and of peeling of the skin are striking phenomena. I now pass round Photographs of a case which I hope to bring before your notice to-morrow, in which the peeling was quite as marked as after a severe case of scarlet fever. I have observed this peeling in several cases. Under the thyroid feeding the patient may be said to get a new skin; but I need not go into details with regard to this point now, although it is of very great importance.

The condition of the skin in myxœdema contrasts very remarkably with that which obtains in exophthalmic goitre and acromegaly. In exophthalmic goitre the skin is soft and moist. A tendency to excessive perspiration is one of the most striking features of exophthalmic goitre. In consequence of the dry condition, the electrical resistance of the skin in myxœdema is very much increased, whereas in exophthalmic goitre, in consequence of the soft, relaxed, and moist condition of the skin, the electrical substance is notably diminished. In acromegaly, too, the skin is usually soft and relaxed, and a tendency to perspiration is often a marked feature. In acromegaly a luxuriant growth of hair is usually a striking feature; whereas in myxœdema, as I have already pointed out, baldness is often very prominent. In acromegaly numerous fine pedunculated warts are apt to be developed on the surface of the skin; while in myxœdema, as I have just pointed out, flat moles are often present.

In myxœdema the expression is stolid, heavy-looking, and apathetic, and the facial appearance reflects the condition of the sensorium. One of the most striking features of the disease is the slowness with which cerebration, especially speech and muscular movements, are carried out. The gait is heavy and clumsy; I have termed it "hippopotamus-like." The speech is slow, thick, monotonous, and measured. These alterations in speech and movement, no doubt, depend partly upon the increased bulk of the body (in the case of the movements of the limbs), and on the swelling of the tongue, lips, larynx, and external organs of speech generally; partly upon the slowness with which the motor nerve apparatus functionates. The swelling of the tongue and fauces also accounts for the difficulty in swallowing to which I have previously referred. And I may say, in passing, that some patients complain of choking sensations, and not unfrequently they speak as if they had something in the mouth. All the cerebral actions of myxœdematous patients are apt to be carried out in a slow and deliberate manner. They often take a long time to answer a question; the "reaction time" is, no doubt, greatly prolonged.

This slowness of thought and action is very striking in many cases of sporadic cretinism. Children affected with sporadic cretinism will often sit for hours together perfectly quiet, apparently taking no notice of or interest in their surroundings; but quite happy, comfortable, and contented so long as they are sitting in the sun or before a hot fire.

The stolidity of myxœdematous patients compares very remarkably with the hyper-excitability of patients affected with exophthalmic goitre. Nervousness, tremor, and unrest are striking features of exophthalmic goitre; whereas stolidity and placidity are characteristic features of myxœdema.

In some cases of myxœdema, more profound mental alterations are developed. The mental deterioration is sometimes so great that the patient has to be sent to an asylum; although I am disposed to think that the cases in which definite mental alterations, either in the direction of depression (melancholia or dementia), or of excitement (delirium and mania), are developed, are much less frequent than the statistics of the Clinical Society would lead one to suppose.

Slowness of thought and mental deterioration are not, however, necessary features of myxœdema. In a well-marked case which I recently saw with Dr Menzies, and which has improved remarkably under thyroid feeding, the mental faculties of the patient were quite keen and acute. It is important to remember that, even when profound mental disturbances are developed, they are merely the result, in most cases at all events, of functional derangement of the nerve centres, and are not of organic disease. The remarkable way in which the mental symptoms may entirely clear off, in the course of a few days or weeks, under thyroid feeding, proves this. The fact, too, that the mental condition of patients affected with the infantile form of myxœdema (sporadic cretinism) may entirely change in the course of a few weeks is one of the most extraordinary features of this remarkable disease. I hope to show you to-morrow a little patient, 8½ years of age (a typical case of sporadic cretinism, which I have recorded in my *Atlas*) in which the mental condition has become completely transformed in the course of five weeks as the result of thyroid feeding. I may say, too, that in that case the patient, who had only grown 2 inches in the previous two years, has grown no less than an inch during the five weeks that she has been under treatment.

The alterations on the sensory side of the nervous apparatus are less striking and important. Sight and hearing are sometimes, though comparatively rarely, impaired. The tactile sensibility of the skin is in some cases very distinctly diminished; but whether this is due to an alteration in the sensory nerve apparatus, or merely to the altered condition of the skin itself, is, I think, doubtful. Both conditions probably account for the alteration. The changes in the reflexes are not of any great importance, and need not detain us.

Hitherto I have been speaking of some of the more important alterations which can be observed by the physician himself. There are still some others to which I must refer. I must also say a word or two with regard to the symptoms of which patients affected with myxœdema generally complain.

Debility and languor and increased susceptibility to cold are the most striking and important. The increased susceptibility to cold is highly characteristic. Myxœdematous patients are almost invariably worse in cold, and better in warm weather. And this increased susceptibility to cold is not merely a subjective symptom; for the temperature in myxœdema is subnormal, and the temperature variations are much less marked than normal. The morning and evening temperature are often practically the same; the diurnal rises and falls which occur in health may be almost entirely absent. I have noticed, too, that in many cases of myxœdema the temperature does not rise under conditions which would tend to elevate it in health.

In these respects myxœdema contrasts very remarkably with exophthalmic goitre. In that disease the patient often complains of subjective feelings of heat (flushings), and elevations of temperature not unfrequently occur. The temperature equilibrium, which in myxœdema is abnormally stabile, is in exophthalmic goitre very easily disturbed; trivial excitements and external irritations, which in health would produce little or no temperature disturbance, are apt to cause very considerable elevations in cases of exophthalmic goitre.

In acromegaly, as in myxœdema, the temperature may be subnormal. I do not know whether this is always the case or not; but in the patient whose photograph I will show you presently, a subnormal temperature is a marked characteristic.

In myxœdema the pulse is usually less frequent than normal. Here, again, there is a very remarkable contrast with exophthalmic goitre, in which, as everybody knows, acceleration of the action of the heart is *the* most striking and constant feature of the disease. In acromegaly, as in myxœdema, the pulse may be slower than normal.

Some anæmia is usually present in myxœdema; but the alterations in the blood do not present any notable peculiarities. Both the red blood-corpuscles and the hæmoglobin are usually moderately diminished in amount. In some cases of acromegaly, the same form of anæmia is also met with.

The condition of the internal organs in myxœdema does not call for any lengthened remarks. As I have already stated, myxœdema is most frequently developed in women who have borne large families; and in many cases of myxœdema, amenorrhœa is present. In some cases this is perhaps the direct result of the disease; but in others it is no doubt due to the fact that the myxœdematous symptoms only become freely developed at or after middle age—at a time when menstruation is about to cease. There can be no question, however, that there is a distinct functional relationship between the thyroid gland and the sexual apparatus. It is well known that in some women the thyroid enlarges during the menstrual period or after sexual excitement. In one of the cases of myxœdema which I have been treating with thyroid feeding, menstruation, which for many months previously was arrested, has been restored with the cure of the disease; and this notwithstanding the fact that the patient is 48 years of age.

In another of the cases which is making rapid improvement under thyroid feeding, a still more curious phenomenon has been observed. The breasts have become hard, painful, and turgid—full of milk. On squeezing the breasts in this case, jets of rich milk could be easily propelled from the nipple.

The tendency to the production of amenorrhœa in myxœdema is another point of contrast with that which obtains in exophthalmic goitre. As already stated, exophthalmic goitre is most frequently developed in young unmarried females, and the menstruation in exophthalmic goitre is usually excessive.

Myxœdematous patients rarely become pregnant after the disease has fully developed. In many cases this is no doubt due to the fact that they are old; but this explanation only holds true in a certain number of cases. Young women affected with myxœdema do not usually become pregnant; and pregnancy, if it should develop, seems to exert a deteriorating effect on the disease to make it advance more rapidly; whereas it is well known that in exophthalmic goitre marriage and pregnancy often prove curative.

In acromegaly, like myxœdema, amenorrhœa is usually developed. In fact, in acromegaly amenorrhœa is a constant symptom. In many cases of acromegaly the first symptom is the sudden arrest of menstruation.

In many cases of myxœdema the urine is quite normal (although the amount of urea is usually diminished); in others a certain amount of albumen is present. In some cases the albumen is doubtless due to associated cirrhosis of the kidney. In old people affected with myxœdema, some cirrhosis of the kidney is often, of course, present. But in other cases the albumen appears to be the direct result of the myxœdematous condition itself; and that this is so, is shown by the fact that the albuminuria may completely disappear, in the course of a few weeks, as the result of thyroid feeding. This was the case in one of the patients whom I am at present treating in the hospital.

In old people affected with myxœdema, the arteries may be atheromatous and the heart degenerated. I may say, in passing, that this is a very important point in regard to treatment. Thyroid feeding is apt, as I shall explain to-morrow (I am anxious not to refer in any detail to the treatment to-day lest I should anticipate anything which Dr Lundie has to say) to produce very remarkable depression; in those cases in which there is reason to suspect any disease or degeneration of the heart or arteries, the treatment has to be conducted with very great care, and the remedy has to be administered in very minute doses until the effect which it produces is accurately measured and watched.

The course of myxœdema is usually long and chronic. The more marked alterations which the absence of thyroid tissue seems to produce are functional in character. The disease does not kill, as a rule, until it has lasted for many years. That the changes are functional is clearly shown by the extraordinary rapidity with which they entirely disappear after a few weeks of thyroid feeding.

The *diagnosis* in typical and fully developed cases of myxœdema presents no difficulty. The clinical picture which these cases present is so striking, that when once one has seen a case it is impossible to help recognising it. It is only in the early stages and in imperfectly developed cases that a difficulty of diagnosis can occur. In young persons, as I have already remarked, the pink blush on the cheeks, which is such an important diagnostic feature, may be entirely absent. In the early stages, the swelling of the face, and the slowness of thought, speech, and movement, being often much less striking, are apt to pass unnoticed. In the earlier stages, increased susceptibility to cold, a subnormal temperature, dryness of the skin, absence of sweating, fulness of the face, especially of the lower lip, a feeling of lassitude and debility, and repugnance to active exertion, whether of body or mind, are the chief features of diagnostic importance.

The *prognosis* of myxœdema has entirely changed within the last few months. Before Dr Murray introduced his method of subcutaneous injection of thyroid extract, the prognosis was extremely bad. In some cases, no doubt, a certain amount of improvement occurred under friction, warm baths, diaphoretics, and tonics; but the disease was rightly looked upon as incurable, for these measures were merely palliative. They did not, and from the nature of the pathological change could not, be expected to produce any or real and substantial amelioration. Now, provided that there are no complications, and the patient is not too old, the prognosis is eminently hopeful. It may, I think, be safely stated that the symptoms of myxœdema may be entirely removed in the course of two or three months by the introduction into the body of thyroid extract, either in the form of subcutaneous injection, or better, through the stomach by thyroid feeding. I must not, however, say anything further on this, which is by far the most interesting and important part of the subject. I have avoided, so far as possible, alluding both to the pathology of the disease, and also to its treatment; but I hope at our meeting to-morrow to have the opportunity of bringing before your notice several cases of the disease which are at present under treatment, and of referring in more detail to the effects of thyroid feeding.

(In the course of his remarks Dr Bramwell passed round a series of water-colour Drawings, Photographs, and Temperature Charts; and concluded by exhibiting on the screen a series of Photographs illustrating the clinical features of the disease.)

II.—THE TREATMENT OF MYXŒDEMA.

By Robert Alex. Lundie, M.A., M.B., B.Sc., F.R.C.S. Ed.

(*Read before the Edinburgh Medico-Chirurgical Society at the Discussion on Myxœdema, 15th February* 1893.)

Two years ago the subject of my paper would have been easily disposed of; for myxœdema had proved, so far, one of the most intractable of diseases. It must not be supposed that treatment had been altogether unavailing: a number of cases had been benefited more or less. Protection against cold, persistent use of hot baths with vigorous friction did much good; among drugs, iron, strychnia, arsenic, nitro-glycerine, and especially jaborandi or pilocarpine, had all proved useful. The more favourable surroundings in hospital conferred temporary benefit on some cases, and a removal to a mild and genial climate on others. Still, little advance had been made since Dr Ord wrote,[1] "The progress of the disease is not readily affected by any remedy. The prognosis is altogether unfavourable."

Now, as I hope to show, there are but few diseases so certainly amenable to treatment.

While the therapeutic aspect of the disease was but little changed from its first description up to 1890, knowledge of its proximate cause had rapidly advanced. In Dr Ord's original paper[2] the atrophied condition of the thyroid was noted and figured. In 1882 M. Reverdin, and in 1883 Prof. Kocher, described a group of symptoms closely resembling myxœdema, which had followed in many cases total removal of the thyroid gland for goitre. In 1883 M. Reverdin commented on the resemblance of the two conditions; which was, however, in this country first called attention to independently by Dr Felix Semon. A committee of the Clinical Society of London undertook the investigation of the subject, and in connexion with its work Prof. Horsley began his remarkable experiments on animals which first satisfactorily established the fact that the cause of the symptoms of myxœdema is loss of function of the thyroid gland.

Prof. Schiff, von Eiselsberg, and others, proved that transplantation of a thyroid from another animal previous to thyroidectomy might diminish or prevent the subsequent degeneration. Horsley[3] followed this up by suggesting transplantation of a thyroid from one of the lower animals as a treatment likely to be useful in myxœdema. Similar operations had already been performed on cases of "operative myxœdema" by Bircher in 1889, and by Kocher so far back as 1883.[4] Horsley's suggestion was soon acted upon, and with at least temporary benefit in most cases. Relapse, however, usually took place; the longest persistence of improvement after a single operation I have found reported is in a case of Mr W. J. Collins',[1] where the patient is said still to have felt well more than a year after transplantation. But the uncertainty and transiency of the effect of this operation was a bar to its general adoption.

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[1] *Quain's Dictionary of Medicine*, article "Myxœdema."

[2] *London Medico-Chirurgical Transactions*, vol. lxi.

[3] *British Medical Journal*, 1890, vol. i. p. 287.

[4] *Ibid.*, vol. ii. p. 201.

One circumstance in connexion with transplantation attracted the special attention of those watching its effects, namely, that improvement was perceptible the day after the operation,—much too soon, therefore, for the gland to have become vascularized and functionally active in its new situation; and it was suggested that this was due to absorption of the juice of the transplanted gland.

Dr G. R. Murray of Newcastle, reasoning on this observation, was led to try the effect of subcutaneous injection of an extract of sheep's thyroid, and obtained remarkable success. His results have been confirmed by numerous other observers. But the inconvenience and risks of the subcutaneous method led to several independent trials of the effect of internal administration, which proved equally satisfactory.

The first of these cases published in this country were those of Dr Mackenzie (33)[2] and Dr Fox (34), which appeared simultaneously last October. I had independently arrived at the same result; but the first to establish the success of this method seems undoubtedly to have been Prof. Howitz (40) of Copenhagen, who communicated his result to the Congress of Naturalists at Copenhagen in July last.[3]

My patient, an unmarried lady, then aged 54, had begun to suffer from increasing stoutness and inability to exert herself about fourteen years before I first saw her. Dr Campbell of Dundee, to whom I am indebted for some notes of her case, saw her a few years after her symptoms began, and finding the urine albuminous, suspected that she was suffering from chronic Bright's disease. But he soon came to the conclusion that her disease was myxœdema; and though she had more than one attack of congestive nephritis while under his care, she has now no albuminuria, and no sign of Bright's disease.

Her swelling and other symptoms fluctuated greatly; but every winter from 1886 to 1891 she had a severe exacerbation of some kind. The last, early in 1891, was characterized by persistent and distressing delusions.

When I first saw her in July 1891 I found her suffering from the characteristic symptoms of myxœdema in a very marked degree. The features were heavy and expressionless, the skin of the face much swollen and waxy-looking, with the characteristic flush on the cheeks; everywhere the skin was dry and harsh, the epidermis cracking and falling off in thick flakes. In the supra-clavicular regions, and to a slightly less degree over the parotid glands, there were prominent elastic swellings. The tongue was large and swollen; the soft palate so much thickened that it almost closed the pharynx. From this cause she had the rare and distressing accomplishment of being able to snore with her mouth shut. Her movements were slow and heavy, her walk was awkward, and she could not walk or stand for more than a moment or two without a stick or other support. Her speech was slow, thick, and hesitating; and her mental faculties were similarly dulled. Naturally of a bright, lively disposition, she seemed oppressed by the weight, physical and mental, of her disease. And no one who saw the dull, heavy, clumsy aspect of face and figure, gait and gesture, could wonder that it was so.

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[1] *Medical Pioneer*, October 1892, p. 6.

[2] The figures within parentheses refer to the numbers of cases in Table.

[3] *British Medical Journal*, 1893, vol. i. p. 266.

Appetite, for some kinds of food, and digestion were good, but bowels sluggish. The heart's action was rather weak, but not otherwise abnormal; the radial pulse was quite difficult to feel through the thickened integuments. No thyroid gland could be detected. The temperature was generally about 95° in the mouth; the extremities were always cold. Menstruation still continued regular on the whole; but there had been an occasional intermission for a few months. She suffered from frequent, often almost constant, headache and giddiness, but they were rarely severe. She was almost always drowsy, even by day; at night she was often tortured by ghastly dreams.

Treatment by injection under the skin of the back was begun in October 1891,—but for the first month, as I afterwards discovered, with thymus instead of thyroid extract. During this time, except that some higher temperatures were observed (once 97°·8), there was no improvement.

On November 28th the first real thyroid extract (Brady & Martin's) was given, representing two-thirds of a sheep's thyroid; and this was repeated five times at intervals of a week. After the second injection the patient began to experience improvement; after the third there was a very striking diminution of the swelling in face, tongue, palate, and hands; and in the succeeding weeks this process went on at a startling rate. It reminded me of nothing so much as the fairy tales, where magic potions make the body grow large and small at will.

She lives with a twin sister, whom she used to resemble so closely that they were constantly being mistaken for each other. When I first saw them I found it difficult to believe they were sisters at all. But when the swelling diminished it was very curious to see the counterpart of the sister's face being gradually revealed as the mask of myxœdema melted away.

The diminution in swelling was attended at first by an increased feeling of well-being, and a sensation of lightness and activity to which the patient had long been a stranger. But very soon this was qualified by the onset of pains, first in the lower part of the face, neck, and chest; a little later in the back and arms, and for a short time in the scalp. These pains were generally aggravated after exertion, and when at their worst were very intense. They were accompanied by great tenderness in the painful parts on slight pressure, so that their seat appeared to be the skin or subcutaneous tissue. Moreover, after the fifth injection the appetite failed, and for several days there was much nausea, with a feeling of weakness. At this time, too, the drowsiness, of which she had complained much before, was replaced by insomnia.

After a month's interval another injection (representing one-third sheep's thyroid) was given (January 22nd, 1892). Just about this time an inflammatory swelling developed at the lower part of the vagina, which led to an abscess, and continued to discharge and to give some discomfort for several months.

Injections (representing one-third sheep's thyroid) were given again regularly every week from February 12th; but the fifth of these caused a considerable abscess, and after April 1st they were discontinued. There had been no local reaction to speak of before; that is to say, till suppuration had occurred spontaneously at a point far away from the injections. About five weeks later the patient began to feel her old symptoms returning, and the deterioration quickly showed itself in slowing of the speech, as well as visible increase of the swelling.

On June 4th, therefore, the injections were resumed with redoubled antiseptic precautions; but two out of three caused abscesses, so that I was forced to abandon them. Even these three had, however, produced some improvement; and about this period perspiration was observed, the first time for many years. On July 9th I gave two very small injections in the forearm, but even these caused considerable inflammatory thickening, though not abscesses.

Under such circumstances it was clearly impossible to go on administering subcutaneous injections, yet the patient was most anxious that the treatment should be continued. I began, therefore, on July 16th to administer the extract by the mouth,—I must say with small hope of success. It was immediately evident, however, that the physiological effect could be obtained in this way as satisfactorily as by injection; and the patient has continued the treatment ever since, and has remained in very much better health than previously, though her condition has not been quite so good during the winter as it was in the autumn and latter part of the summer.

The photographs taken at the commencement of treatment (October 1891) and a year later respectively show better than a long description could do the improvement in her appearance. The face is natural, and has a bright, intelligent expression; everywhere the swelling has much diminished, and the skin is soft and pliant; speech is vigorous and quick; she can stand and walk easily without a stick or other support, and can assist in household duties which were before impossible for her; the pulse is readily felt; the temperature usually 97° or more,—98° on the last two occasions when it has been taken; the extremities warm and comfortable.

She kindly wrote down for me her own impressions of the result of treatment; and though it involves a little repetition, I need make no apology for quoting her description, written on 25th January 1893:—

"During last year my health improved immensely. From sitting weakly and drowsily in my chair (and almost invariably in pain), I have become lively, strong, and active, with good appetite for many forms of food which before I could not touch, and am able to enjoy life. I am considerably decreased in bulk, and my arms and hands so strengthened as to enable me to carry with ease what before I could scarcely lift. I can sew heavy work, when formerly I could not hold the needle.

"In the summer months I perspired freely (though not all over), which I had not done for very many years. For years I had suffered from confused headache, sometimes severe, but in the early part of January 1892 it left me entirely; and although I am not quite so well now (cold weather affecting me), I am still able to go about and make myself useful in various ways."

I have encountered one very curious difficulty in maintaining the treatment, which deserves to be farther considered. Pains precisely similar to those I described as following the first series of injections continue to trouble her whenever the dose of the thyroid extract is increased beyond a certain point. They have never been so severe as on the first occasion; but they are sufficient to limit her activity, and cause her sometimes considerable inconvenience. They are usually accompanied by breathlessness, which, like the pain, is readily induced by exertion. She herself professes to recognise a distinct difference between this and the form of breathlessness with which she used to be familiar as one of the myxœdematous symptoms.

So much are these symptoms associated with the taking of the extract, that she herself says, when the dose is reduced to a point at which the pains are absent, that "she feels as if the medicine were not doing her any good"; and, in fact, on one occasion there was distinct evidence of relapse when this condition was maintained for some weeks. At present she is taking extract corresponding to $\frac{1}{18}$th sheep's thyroid daily, and this seems as much as she can stand.

With regard to the cause of the pains, and the other unpleasant symptoms met with, it seems profitless to speculate till we know the effect of similar doses on healthy individuals.

Ever since I began using thyroid extract I have avoided all other methods of treatment, with the single exception that I have from time to time found it necessary to resort to the administration of cardiac tonics. There is no reason why most of the methods that had previously done good in myxœdema should not be used concurrently with the thyroid treatment, except that it seems, in most cases, not to require to be supplemented.

During the last eighteen months more than forty cases of myxœdema treated either by subcutaneous or internal administration of thyroid gland or its extract have been noticed in the medical journals. The first and most striking fact about them is that amelioration of the symptoms has almost invariably been effected. In only two (10, 11) where the result is stated is there said to have been no improvement; and as those two are reported by the same observer, I think it may safely be assumed that there was some error, probably in the method of procedure. Excluding these cases, then, we may say that treatment with thyroid gland *invariably* does good to cases of myxœdema,—a statement that could be made with regard to very few of our therapeutic procedures in any disease.

But if it always does good to the symptoms of myxœdema, it certainly cannot be said that it never does harm to the patient. The catalogue of more or less unpleasant results is somewhat formidable. A few have been associated only with subcutaneous injections. Abscesses, as might be expected, are of not infrequent occurrence (1, 9, 22, etc.). Dr Murray[1] has met with "flushing, nausea, and stabbing pain in the lumbar region. Once there was also loss of consciousness, and general tonic muscular spasm for a few seconds." And Dr Hearn (12) reports that on one occasion "the skin became so livid as to be almost blue-black; then followed tremors, quivering of the limbs, and complete unconsciousness, which lasted about a quarter of an hour."

But besides these results, which seem directly dependent on the method of administration, there are others due to later physiological effects, as they have also occurred after administration by the mouth. These may, in the main, be classified under the heads of—1, Weakness; 2, Pain; 3, Nausea: all these have been mentioned in the account of my own case.

1. *Weakness.*—One of Dr Hale's patients (27) said "that she, to a great extent, lost the use of her hands for two days" after an injection; and again, had "weakness and pain in the arms following the injection for some hours." Another (28) had "frequent fainting-fits" after one injection; and after another "felt 'queer,' and unable to raise her arms."

Dr Fox's patient (34), under larger doses than were meant to be taken, "noticed she was getting rapidly weaker, profuse perspirations breaking out on the least exertion; she was unable to walk or stand steadily." Dr Holman's patient (37) suffered from "tumultuous action of the heart at night," with very rapid pulse.

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[1] *British Medical Journal*, vol. ii. 1892, p. 449.

2. *Pain.*—One of Dr Hale's cases (27) suffered from "much giddiness and headache for twenty-four hours." In Professor Bouchard's cases (19, 20), "headache and pains in the chest and limbs" compelled the treatment to be suspended.

Dr Mackenzie's patient (33) "complained of aching pains all over;" while Dr Cresswell Baber's (36) had "sharp headache and intense aching in the back and limbs, which continued for three days, and obliged him to keep his bed."

3. *Nausea.*—Dr Beadles' patient (25) said "that she always felt hot, and had a sense of sickness after the injections." One of Dr Hale's patients (28), already referred to, "after the first few injections was troubled for some hours with sensations of faintness and nausea."

Dr Mackenzie's (33) and Dr Baber's (36) patients had nausea, and the former vomiting as well as pain.

None of the *contretemps* above noticed, though some of them must have been very startling, seems to have led to any serious result. But two of Dr Murray's patients (5, 6) died suddenly, apparently from cardiac failure, after having undergone treatment by injections. Both were feeble and over 60; and, especially in the absence of information as to the post-mortem appearances, the connexion of the fatal result with the treatment must remain doubtful.

My own patient seems very nearly to have met a similar fate. On June 17, 1892, having had an injection a few hours before, she drove into the country, and after arriving at her destination exerted herself much more than she had done for some time. She was suddenly seized by a feeling of extreme faintness and breathlessness, and became livid. She was laid down, had a stimulant administered, and very soon recovered; but from the description that was given me of her condition, I believe her to have been for the time in very great peril. In this case, as in Dr Murray's, I do not think it can be regarded as by any means certain that the thyroid extract caused the attack of faintness; but it must be looked upon, at all events, as under suspicion.

In connexion with these occurrences, however, a remark made by Dr Woodhead last year[1] is of very great importance. He said, "That in a series of experiments in which he had injected various extracts of different glands into rabbits, he was particularly struck by the effect on the heart, as very frequently degeneration of the muscle tissue ensued." It seems most important, in view of the future use of the thyroid treatment, that careful experiments should be undertaken with the view of determining the precise conditions of this occurrence, and particularly whether internal administration of gland extracts has the same effect as injections.

[1] *British Medical Journal*, 1892, vol. ii. p. 452.

Meantime, patients must be carefully warned of the risk of unusual exertion, at all events in the earlier stages of the treatment.

I have spent so much time on the consideration of these toxic effects because I wish to bring out clearly the great and unexpected activity of the remedy with which we have to do. I think they may, in the great majority of cases at least, be avoided by using moderate doses and judicious methods of administration.

With regard to the effects of similar administration of thyroid in health or in other diseases than myxœdema and its allies, I have been able to gain hardly any information, except that it has been tried by more than one physician with entirely negative results in exophthalmic goitre.

The cases already put on record are sufficient abundantly to prove that thyroid gland or its extract can relieve, and in some cases practically cure, myxœdema. Of course it would be unreasonable to expect it to take effect upon all the results and complications of a severe case of the disease; but the recorded effects in some cases have gone far beyond the most sanguine of reasonable expectations; and when more than one case with insanity (9, 25) and one with severe nephritis (37) have been found to improve greatly in these respects as well as with regard to the strictly myxœdematous symptoms, I think it would be rash at present to assign limits to the possibilities in this direction.

Deterioration is generally evident after a suspension of the treatment for a few weeks: it is natural to expect that continuous treatment will be required to counteract a continuously acting cause of disease. Experience only can show whether the improvement attained at first can be maintained indefinitely. It seems likely, however, that an agent capable of ameliorating the disease, even in an aggravated form, will be able to keep it permanently in check if steadily persevered with. To remove the cause is at present beyond our power, and, except in the earliest stages of the disease, will probably always remain so; unless, indeed, farther experience points out a means of securing a certain and permanent result by transplantation. The present thyroid treatment cures myxœdema, not in the sense in which scabies or ringworm, ague or syphilis, is cured, but in a very real and practical sense,—that in which constipation is cured by the continuous administration of purgatives. The morbid tendency is not removed, but artificially counteracted.

The thyroid of the sheep has generally been used; but cows', calves', and pigs' thyroids have also been tried, apparently with equally good results. Care must, of course, be taken to secure, as far as possible, healthy glands. Dr Napier[1] states that he has found more than 50 per cent. of sheep's thyroids to "show more or less evident indications of deviation from normal structure." But the sheep, being comparatively little liable to tuberculosis, seems to be the most satisfactory animal available from which to obtain the remedy.

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[1] *Lancet*, 1893, vol. i. p. 273.

The doses given have varied enormously, from $\frac{1}{120}$th of a thyroid hypodermically (31) to two thyroids daily by the mouth (33, 40). The former is probably too small; the latter very speedily proved far too large a dose. But it is no wonder, considering the indifference, not to say contempt, with which we have been accustomed to regard the thyroid, that heroic doses should have been tried.

In one case (21) doses of one-sixth gland subcutaneously were followed by pain and weakness; most effects of that kind have not been produced except by larger doses.

One-fourth to one-half gland weekly, if administered subcutaneously, or one-half to one gland given by the mouth, seems to have been sufficient to bring about rapid improvement at the beginning of the treatment; and considerably less doses prevent a relapse when a condition approaching the normal has been reached. Perhaps it may be found more satisfactory to give smaller doses than I have mentioned from the first, and to be content with a less speedy result than has generally been aimed at; as in Mendel's case (31), where slow but distinct improvement resulted from *hypodermic* injections first of about $\frac{1}{120}$th, later of $\frac{1}{80}$th gland *daily*.

If we gave our patients their weekly allowance of *digitalis* or atropia, or any active drug—nay, may we not say their weekly ration of any ordinary food?—in a single dose, toxic symptoms would certainly be a pretty frequent result. Now, this is just what has often been done with the thyroid gland hitherto, and from this most of the unpleasant effects seem to have resulted. Now that it is proved that the gland is a very powerful remedy, such methods should be avoided in future so far as possible, and this can be done much more readily by internal than by hypodermic administration.

For this reason, as well as on account of obvious inconveniences, and the special risks of the hypodermic method already considered, I think treatment by the mouth is greatly to be preferred. It is said that the unpleasant effects immediately following hypodermic injections can be avoided by very slow administration. But even the mere possibility of producing an epileptiform convulsion is too serious a matter to be lightly regarded. The results of internal administration have been just as successful as those of injection; and I have seen no reason for preferring the latter. It is possible that stomachs may be met with intolerant of the remedy even in small doses; in that case rectal administration might be resorted to.

The form in which the remedy is given seems meantime not of essential importance. The raw gland, the liquid extracts prepared by various chemists, the solid extracts used by Dr Arthur Davies[1] and Dr Vermehren,[2] appear to be all equally efficacious. The raw

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[1] *British Medical Journal*, 1893, vol. i. p. 289.

[2] *Semaine Méd.*, 8 Fév. 1893, p. 59.

THYROID TREATMENT OF MYXŒDEMA: *Treated by Hypodermic Injection.*

								been ordered. Gland partly cooked.
35.	Dr Handford.	*Ib.*, ii. 1892, p. 1434.	...	...	...	Improved.	...	...
36.	Dr E. Cresswell Baber.	*Ib.*, i. 1893, p. 10.	M. 53.	5 or 6 years.	5 glands in 3 weeks.	Much improved.	Depression, headache, and aching in back and limbs; nausea.	...
37.	Dr C. Holman.	*Ib.*, i. 1893, p. 114.	F. 44.	7 years.	1 gland every second day; later ½ gland.	Do.	Tumultuous action of heart; disturbed sleep.	Disease in right kidney improved simultaneously.
38.	Prof. M'Call Anderson.	*Practitioner*, Jan. 1893, p. 39.	F. 30.	(?) 10 years.	B. ♏20 daily, then less often.	Do.	...	...
39.	Dr R. A. Lundie.	*Brit. Med. Jour.*, i. 1893, p. 64.	F. 53.	14 years.	B. ♏5 daily at present.	Do.	Abscesses and nausea from subcutaneous injections. Pains in chest, arms, etc.; breathlessness.	...
40.	Prof. Howitz.	*Semaine Méd.*, 8 Fév. 1893, p. 59.	F. 42.	7 years.	2 glands daily; later 1 gland every second day.	Do.	Pain in chest, with quick, weak pulse; intense urticaria.	Calves' glands partly cooked.
41.	Dr A. T. Davies.	*Lancet*, i. 1893, p. 248.	F. 47.	...	Powder rep. ⅛th gland; first twice weekly, then daily.	Do.	...	Lost 4 stones under treatment.
42, 43.	Do.	*Ib.*, i. 1893, p. 248.	F.	...	Do.	Improved.	...	...
44.	Do.	*Ib.*, i. 1893, p. 248.	M. 45.	6 years.	...	Do.	...	...
45.	Dr Pasteur.	*Ib.*, i. 1893, p. 248.	F. 55.	(?) 17 years.	½ gland twice a week; later 1 gland daily.	'Markedly improved.'	'Toxic symptoms, accompanied by extreme feebleness of heart.'	...
46.	Dr Calvert.	*Ib.*, i. 1893, p. 248.	F.	12 years.	½ gland thrice weekly.	'Getting better rapidly.'	...	Gland partly cooked.

* B. stands for Brady & Martin's Extract, of which 90 minims correspond to one sheep's thyroid.

gland, or a home-made extract prepared from it, has the advantage of cheapness; an extract manufactured on a larger scale will probably be of more uniform strength, and admit of more accurate dosage,—a matter of some importance, considering the activity of the remedy. If the extracts in powder prove stable, I think there can be no doubt that they will be found the most convenient and satisfactory. The method of partially cooking the gland introduces an unnecessary element of uncertainty of dosage, if, as seems probable, the physiological effect is destroyed by heat, and is therefore undesirable.

A number of interesting questions are opened up by this new departure, and some of them will probably soon be answered. For example—What is the nature of the active principle? What is its effect on healthy individuals? What is the cause of the pain and other unpleasant results encountered in the treatment? What other diseases (if any) are amenable to analogous methods?

Meantime clinical medicine and experimental physiology, working hand in hand, have achieved a result of which both may well be proud; a result which proves, if proof is needed, the value of patient and painstaking labour in fields apparently the most barren and unpromising; a result which *should* vindicate, once for all, even in the eyes of those most prejudiced, the importance to suffering humanity of that most maligned of men, the vivisector.

III.—SIX CASES OF MYXŒDEMA TREATED BY THYROID FEEDING.

By G. H. Melville Dunlop, M.D., F.R.C.P. Ed.

(*Read before the Medico-Chirurgical Society of Edinburgh at the Discussion on Myxœdema,* 16*th February* 1893.)

Mr President and Gentlemen,—I propose bringing under the notice of the Society the following six cases of myxœdema which I have had under treatment lately, partly because I think that they serve to emphasize the treatment of the disease by means of the thyroid extract, a *résumé* of which was last night so very ably and graphically brought before us by Dr Lundie, and partly because my cases present some unique points, which, I venture to hope, may not be without interest for the members of the Society.

The first case to which I should like to direct the Society's attention is that of a single lady, aged 46, who has suffered from myxœdema for the last five years.

Her family history is specially interesting. Her twin sister has had exceedingly well-marked myxœdemic symptoms for the last twelve years, and she was, I believe, one of the first cases of the disease recognised in Edinburgh.

These ladies were patients of the late Dr Struthers of Leith, and their cases are well known to several members of the Society, who had an opportunity of seeing them in consultation with Dr Struthers. The following is an extract from a letter written by their mother in 1849, three years after their birth, she herself being at that time about 40 years of age:—

"I am getting very old-like, and have much difficulty in getting about. My colour is very bad, and I am exceedingly stout without being strong. I am assuming the corpulent look of advancing years, to my great dismay."

A bust of this lady, the cast for which was taken after death, bears many of the characteristic features of myxœdema, especially noticeable in the thickened lips and the swelling under the eyes.

Her nephew, now a well-known Scottish Academician, says, that from his remembrance of his aunt he has not the least doubt that she suffered from myxœdema, and other relatives bear him out in this opinion.

Further, my patients have been frequently told since the commencement of their illness that they were becoming like their mother, a likeness never previously remarked upon.

I have not the slightest hesitation in saying that another sister who died seventeen years ago, and whom I remember well, was a very typical and far-advanced case of myxœdema.

Her case was regarded as a very obscure one by the medical man who attended her.

I need not relate in any detail the symptoms of Case No. I., which were well marked.

The onset was very gradual, and the increase in bulk manifested itself slowly. She had gained about 4 inches round the waist, and she was about 2 stones heavier than she was before her illness commenced. She suffered greatly from stiffness and cramps in her muscles, and had much difficulty in rising from a chair, turning in bed, or in attempting to walk. Her tongue and soft palate were much enlarged, and the speech slow and deliberate. The temperature was 96°·6, and the patient was very sensitive to cold, and she was irritable and unhappy.

Treatment was commenced on October 8th, 20 drops of Brady & Martin's thyroid extract being given by the mouth, before breakfast, three times a week. The patient was warned against making any special exertion, or exciting herself in any way, and was recommended to remain in bed on the days upon which the dose was administered. In ten days the temperature had risen to normal, and the patient felt comfortably warm, and did not wish to sit over the fire as formerly. Speech was much less deliberate, and the drawn, weary feeling about the forehead had gone.

October 28.—Lips moving much more freely, especially the under lip, and the patient is speaking fluently and naturally again. Her skin is softer and more flexible, and she feels less languid, and her spirits are markedly improved. The muscles of the arms and legs have lost the hard boardy feel, and all her friends notice a most striking improvement in patient's appearance. She moves about more actively, and with less of the air of "une grande duchesse." She no longer complains of the crampy pains in her limbs.

November 8, a month after the commencement of treatment.—The improvement is most striking. Patient's clothing, instead of fitting tightly, is hanging loosely upon her, and she has lost 10 pounds in weight. The face, instead of being square, is again assuming an oval shape, and the puffy appearance in the lower eyelids has quite vanished. Patient complains of aching pains in the limbs and over the neck and chest. A pair of gloves which she could not get on two months ago now slip on quite readily.

November 20.—Can again play on the piano, and can write, knit, and sew with ease. The tongue is greatly reduced in size. Patient does not become worn-out and exhausted nearly so readily as formerly. The heart's action has become very irregular and intermittent, and the patient complains of palpitation.

Accordingly the dose was reduced to 20 drops twice weekly, cardiac tonics were administered, and she was confined to bed for a few days.

December 2.—Palpitation and irregularity of heart's action greatly improved. Patient appears to be getting rather thin, and has had for the second time to tighten all her garments. Dose further reduced to 15 drops twice a week.

December 16.—General appearance, speech, colour, and temperament as they were before the commencement of the illness.

January 10.—Patient says that she feels quite well again, and perfectly cured. All her old aches and pains have disappeared, and she has regained her former activity, and walked a long distance without feeling tired. She still complains of some stiffness in the muscles on opening and shutting her hands. The tongue appears of a normal size again, and her hair is growing naturally once more, and has lost the dry scaly appearance, and the nails, instead of being brittle and hard, are quite smooth and polished. In the centre of each nail there is a prominent nodule, marking the date of the commencement of treatment, the upper or old half being cracked and brittle, and the lower or new half quite smooth and natural in appearance. The dose was further reduced to 15 drops once a week.

January 18.—The patient has lost over 2 stones in weight, and the following comparison shows the difference in the measurements now and three months ago:—

	18th October 1892.	18th January 1893.
Abdomen, . .	34 inches.	31 inches.
Waist, . .	29 „	27 „
Calf, . . .	12½ „	11 „
Upper arm, . .	9½ „	9 „
Forearm, . .	9¼ „	8¼ „

Patient continues to feel quite well, and can now go about as before her illness, and takes a keen interest once more in all that is going on. Dose reduced to 15 drops once a fortnight.

February 1.—The patient has experienced no bad effects from the reduction of the dose, and continues to feel quite well.

Remarks.—There was never any nausea produced by the thyroid feeding in this case, and the only symptom causing any inconvenience was the irregular and intermittent action of the heart, caused doubtless by the disturbance in the balance of the circulation, and which was quickly overcome by reducing the dose and confining the patient to bed for a few days, and giving a cardiac tonic. There was at no time any excessive perspiration produced; but the patient informs me that previous to her illness she does not remember perspiring even when she indulged in violent exercise.

The next patient, namely, the twin sister of the last recorded case, shows a still more remarkable result produced by the thyroid feeding. In her case the disease had lasted over twelve years, and there was an enormous increase in the size of the body as a whole, as well as of the individual parts. This lady had been completely invalided, and unable to move about or use her hands or arms for the last seven or eight years. The very least exertion caused her to lie back exhausted, and frequently induced attacks of syncope. She suffered much from cramp and pains in the muscles of the back and limbs. The usual signs of myxœdema were in this case well marked: her complexion, expression, speech, and the condition of the hair and nails were very characteristic. The skin was very dry and scaly, and there were large numbers of small warts covering the neck, and there was also much brown discoloration of the skin of the chest, back, and sides, occurring in patches. The temperament was most placid, and she had accepted her illness very philosophically. Conversation caused her much effort, and she often forgot words and names, and wandered from one subject to another.

During the few months preceding treatment the condition of this patient had become much worse, both mentally and physically, and she had been altogether confined to bed. Gradually she became quite childish, and had hallucinations of sight, smell, and hearing. She continually declared that there were people in the next house trying to annoy her by speaking along electric wires connected with her bedroom. She imagined that *séances* of the Maskelyne and Cook variety were being conducted in her room. She saw people whispering, and complained that dogs and cats, cocks and hens, were annoying her with their peculiar sounds. The mental symptoms gradually became worse, and the patient became sleepless and restless, and refused food. By degrees acute mania developed, the patient throwing articles about the room, continually calling out loudly, and having a very wild and anxious expression. The tongue was thickly coated, and the restlessness and excitement were often so severe that it required considerable strength to restrain the patient, whose own strength was marvellous, considering her previous weak condition.

She had been in this state for over six weeks, under the care of mental nurses, when I determined to give the thyroid extract a trial, with, I must confess, but faint hopes of success.

The treatment was commenced on the 18th of October, 20 drops of the thyroid extract being administered thrice weekly. By the 30th of October the excitement had quite gone, and the patient was resting and sleeping quietly. She had no longer any hallucinations, and was speaking rationally, and she was again taking nourishment freely, but was very weak.

November 12.—Feels as if she were recovering from a long illness. She remembers that she had been in a very peculiar and excitable state. Temperature 98°·8 F. Patient is speaking much more freely, and face is already smaller and more mobile. She feels warmer and more comfortable, and no longer objects to the touch of a cold hand, as formerly. She perspires slightly every night, and the bowels now move regularly without the necessity of having recourse to aperients. The dose was reduced to 20 drops twice a week.

November 24.—Complains of rather severe aching pains in limbs and over the upper part of chest and neck. Voice is much stronger, and patient speaks naturally and quickly again. She cannot understand the reason for the change in her condition, the patient not having been informed that she was being subjected to any treatment, which was now explained to her.

December 7.—The skin is quite soft and satiny, and no longer harsh and scaly. Muscles have lost their hard and board-like feel. Pulse can again be felt, which it was quite impossible to do at the commencement of treatment, owing to the subcutaneous œdema. To-day patient sang one of the old English ballads from commencement to end without any effort, this being the first time she has attempted to sing since the commencement of her illness.

December 28.—The body is nearly half the former size, and the face is much smaller. The complexion is clear and natural, and the brown discoloured patches on the chest and abdomen are no longer visible. Patient no longer snores during sleep, and is perspiring freely. Hair is again growing thickly on a bald spot which has existed for many years, and a fresh crop of young hair is growing thickly all over the scalp.

January 14.—Patient is now able to be out of bed, and to sit up eight or nine hours daily, and is once more able to knit and sew. The thyroid extract is now being given only every alternate week.

The following are the measurements taken on the 18th October and on the 14th January:—

	18th October.	14th January.
Abdomen, .	38 inches.	34 inches.
Waist, . .	33 „	28 „
Calf, . .	14½ „	11 „
Upper arm, .	11½ „	10 „
Forearm, .	10½ „	9 „

February 1.—Patient continues to improve, and feels like her old self. Many of her friends scarcely recognise her, so marked is the improvement in her appearance. The temperature has remained at normal since ten days after the commencement of treatment. She talks a great deal, and very quickly. Patient has experienced no bad results from having had no thyroid extract last week. She goes out in a bath-chair every day, and is feeling much stronger.

February 13.—Weight is now 10 st. 9 lbs., whereas three months ago it was 14 st. 10 lbs. Patient can sew quite dexterously again, and feels very happy at the change which has taken place in her condition.

CASE III. is that of a married woman, aged 43, whom Dr Haultain kindly sent to me for treatment. The disease had first manifested itself three years ago. She had been treated two years previously to the commencement of her illness for a large goitre, which had interfered with her swallowing, and which had gradually disappeared under treatment, until no trace of the thyroid gland could be discovered, and atrophy of the gland had supervened. The cure of the goitre had resulted in myxœdema, the cure in this case being worse than the disease. There was a great amount of solid œdema of the body and face and limbs. Her complexion was very typical, being almost purple at the point of the nose and in the centre of the cheeks, and gradually faded into a pinky, and then into a waxy hue. The tongue was very large, the speech slow, the skin dry and scaly, the hair scanty and lustreless, and the lips were greatly thickened, and moved slowly and deliberately. Her hearing was greatly impaired, and was gradually getting worse, and she complained of buzzing sounds in both ears. Her temperament had undergone a great change, and instead of having a bright and happy disposition, she had become morbid and suspicious, and was being subject to delusions, under the impression that some one was mesmerising her. The urine was scanty, and acid in reaction. The heart sounds were feeble. The temperature was 96°·4. Treatment was commenced on the 18th of November, 20 drops of the thyroid extract being administered thrice weekly.

December 1.—Temperature has already risen to normal, and the patient feels comfortably warm, and no longer desires to sit over the fire. Her mind is much clearer, and she feels as if a great weight has been lifted off.

December 10.—Hearing is greatly improved, and the sounds and buzzing in the ears no longer annoy her. Her friends are much gratified at the improvement in her appearance and speech, of both of which she is conscious herself. She perspires naturally.

December 20.—The choky feeling of which she used to complain has gone, and she can now swallow with ease. The very marked purple colour of her cheeks is quickly disappearing, and the complexion is assuming a natural colour. Patient feels much happier, and no longer regards her friends with suspicion. She is again able to sew, and has made a frock for one of her children, which she had not attempted to do for some years. Dose reduced to 20 drops twice a week.

December 28.—The puffiness about the eyelids is no longer visible, and the skin is much softer. Her mind is again clear and active, and all her friends remark upon the change in her appearance and spirits.

January 8.—Patient can again attend to her household duties and go about as of old, and last week walked a couple of miles without feeling fatigued. Dose reduced to 20 drops once a week. Patient says that she feels quite well again. Speech, complexion, and expression are perfectly natural, and no trace of the disease is left. Her hearing is now as acute as ever. She is much thinner, and has had to tighten all her garments, and she has experienced no bad effects from the reduction of the dose. Bowels now move daily. Dr Haultain, who had not seen her since the treatment was commenced, was much struck with the change in her appearance and temperament. Temperature remains normal. Measurements:—

	18th November.	1st February.
Abdomen, .	41 inches.	35 inches.
Waist, . .	33 „	28 „
Calf, . .	14¾ „	11½ „
Upper arm, .	11½ „	10 „
Forearm, .	10 „	9 „

February 14.—Patient continues quite well.

This case is a good example of the rapidity with which improvement takes place, all the symptoms having yielded to treatment in a couple of months.

My fourth case is that of a married lady, aged 56, in whom symptoms of myxœdema manifested themselves nine years ago. The disease developed very slowly, the patient gradually becoming stout and getting easily wearied. The complexion became bad and the eyelids swollen. The trunk and limbs were greatly infiltrated with solid œdema, and so greatly were the eyelids swollen, that, in order to see out of her eyes, she had to hold the eyelids apart with her fingers. The tongue and soft palate were much swollen, and she had difficulty in swallowing, and frequently choked. The face was stolid, square-shaped, and broadened out, especially in the lower half. The upper eyelids were much elongated and the eyebrows arched. The complexion was very characteristic of the disease, and the skin dry and scaly. Patient was very susceptible to cold, and always felt better in warm weather. Temperature 97°·2. She perspires slightly, and there is considerable increase in the secretions from the nose and eyes. Speech is slow and deliberate, and there is great muscular weakness, and the patient cannot walk any distance, and staggers when attempting to do so. Urine is very acid, sp. gr. 1010, and only about 20 ounces are passed per diem. Pulse is difficult to feel, owing to the thickening of the tissues. Appetite very good. Bowels are constipated, and the patient suffers almost constantly from piles.

December 31.—Treatment was commenced by giving 20 drops of the thyroid extract thrice weekly.

January 7.—Has been perspiring very freely,—so freely, indeed, that the night-dress has to be changed twice in twenty-four hours. Temperature has already reached the normal, and patient feels much warmer. Bowels are moving daily.

January 14.—Continues to perspire very freely. The thyroid is given before breakfast, and the patient commences to perspire about 2 o'clock, and continues doing so till the following afternoon. The perspiration has a thick, oily feel. Patient already feels much lighter and better, and has lost over 7 lbs. in weight in a fortnight.

February 2.—Patient has changed greatly in appearance, and is a stone lighter, being now 12 stones instead of 12 stones 13 lbs. Speech is much faster and tongue smaller. Patient no longer snores when asleep. She complains of aching pains over chest and limbs. Her friends are delighted at the change in her appearance.

February 12.—Has no longer to hold the eyelids apart when looking at anything. Œdema is rapidly disappearing, and perspiration is not so profuse. The saliva is much increased in quantity, and runs out on the pillows. There is also a considerable discharge of mucus from the mouth and nostrils. Pulse can now be readily felt. Patient feels a great improvement in her condition, but is evidently suffering a good deal from weakness, owing to the rapid loss of tissue. The improvement is so marked that a friend who saw her four weeks ago failed to recognise her.

CASE V.—Mrs R., aged 48, married. Illness commenced about twenty years ago, when patient found herself getting stout and losing strength. Her friends passed her in the street, failing to recognise her. The disease advanced very gradually, and during its course there have been periods of remission, during which the patient has felt better, and the swelling of the tissues has diminished. These periods have always taken place during summer.

Present Condition.—The body, face, legs, hands, and arms are all greatly swollen, and the legs especially have a hard, board-like feel. There is likewise a very great increase of hard, resistant œdema at the back of the neck. The hands are broad and spade-like, and the tongue is much enlarged. The patient notices that the swelling is always more marked in the evening. Temperature 96°·8. Speech is slow and deliberate, and she suffers much from muscular weakness. The saliva is increased in amount, and the pillow is always wet in the morning. The usual symptoms of myxœdema are well marked. Treatment commenced on 21st January, 20 drops of the thyroid extract being administered thrice weekly.

January 24.—Patient feels nauseated and unhappy, and disinclined for food. Bowels somewhat relaxed.

January 28.—Temperature, 99°. Patient is perspiring about the chest and upper part of the body. She still complains of nausea and want of appetite.

February 4.—Is again taking nourishment quite freely, and nausea has completely disappeared. She perspires very freely, and feels comfortably warm. The œdema about the eyelids is markedly less, and the patient is passing a larger quantity of urine. She feels her hands smaller, and the veins are once more becoming prominent on the backs of the hands. She does not sleep very well.

February 9.—Her friends notice a marked difference in appearance and speech, which is both stronger and faster. The skin is much softer, the colour better; and the patient feels less unwieldy, and can turn more readily in bed. She complains of aching pains in chest and limbs. The bowels move daily.

February 14.—The patient is 12 lbs. lighter than she was on the 21st January, and there is a great diminution in the œdema, chiefly noticeable in the reduction of the swelling at the back of the neck, and in the reduced size of the legs and hands. The perspiration is now very free, and is causing desquamation of the skin in large flakes, similar to what occurs in scarlatina. The lips and tongue are smaller, and she is talking with less difficulty, and her spirits are markedly improved. The temperature remains normal.

Case VI. is that of a man, aged 63, who has been an out-patient at the Royal Public Dispensary during the last six years. He dates the commencement of his symptoms eighteen years back, and had to drop work fifteen years ago, owing to the difficulty he experienced in using his legs and arms. All the usual features of myxœdema were present. He had become much worse during the last two years, and was so weak that he was entirely confined to bed, and was unable to stand unsupported. His speech was so slow and indistinct that it was almost impossible to understand what he was saying. He had delusions of sight and hearing, and was at times delirious. Temperature 95°·8 F. Treatment was commenced on the 26th January, ⅛th of a thyroid gland being administered twice a week.

February 3.—Not much evidence of improvement in patient's condition. He is still wandering a good deal, and seems if anything a little weaker, and great difficulty was experienced in getting him out of bed to have his photograph taken.

February 6.—Patient says that he feels comfortably warm. Temperature has already risen to 97°·4. Breath is very offensive, and patient has a decided objection to take any nourishment. Voice seems slightly stronger. The bowels are more regular in their action.

February 11.—Temperature normal. Patient still complains of some amount of nausea, and is restless and sleepless at night. He is perspiring freely.

IV.—NOTE ON A CASE OF MYXŒDEMA WHICH ENDED FATALLY SHORTLY AFTER THE COMMENCEMENT OF THYROID TREATMENT.

By John Thomson, M.D., F.R.C.P. Ed., Extra Physician to the Royal Hospital for Sick Children, Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh, at the Discussion on Myxœdema* 16*th February* 1893.)

In December 1887 I showed a case of myxœdema (Annie C.) at a meeting of this Society.[1] I need not now go fully into the facts of her previous history, but I may just mention that she was an unmarried woman, aged 51 years, who presented well-marked but not very severe symptoms of myxœdema, and that these had developed very gradually, she having been ill certainly more than ten years. Her case is recorded very fully, along with a most life-like coloured portrait, in Dr Byrom Bramwell's *Atlas of Clinical Medicine.*[2]

During the last five years the patient has lived an exceedingly quiet life, and the disease has progressed very slowly. For many months she was greatly relieved by taking 30 minims of tincture of jaborandi three times a day. This kept her skin comfortably moist; but afterwards the dryness of the skin ceased to be a distressing symptom, and she therefore discontinued the medicine. For some years she has had no special treatment for the myxœdema. She has continued to suffer constantly from more or less dyspepsia, from constipation and piles, from chilliness, and from a distressing feeling of weakness and disinclination for exertion.

Last August she was very ill with severe pain, which began in the region of the heart and passed down the left arm; it was accompanied by severe dyspeptic symptoms. This recurred frequently for a few weeks, and then passed off; though it returned occasionally afterwards in a less severe form.

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[1] *Trans. Edin. Med.-Chir. Soc.*, vol. vii. p. 49.

[2] *Atlas of Clinical Medicine*, vol. i. plate 3.

On *December 22nd*, 1892, I ordered her to take by the mouth a quarter of a sheep's thyroid twice a week. At this time she had more swelling of the face than she had ever had before, and there were large fatty tumours in both supra-clavicular regions. Her temperature was 97°·5 in the mouth; her pulse 80.

On *December 31st* (after three doses), as she noticed no change in her condition, with the exception of slight headache, she was ordered to take half a thyroid twice a week.

On *January 6th*, the patient complained of severe angina-like pain similar to that which she had had last August. It came on chiefly after exertion, and, starting in the region of the heart, passed down the inner side of the left upper arm, generally stopping abruptly about 2 inches above the elbow, but occasionally felt also over a small area on the dorsum of the hand. On inquiry it was found that she had been exerting herself more than usual, her servant having gone for a holiday. The heart-sounds were weak, but otherwise normal. The swelling of the features was much diminished. Nitro-glycerine (♏j. of a 1 per cent. solution) every four hours was ordered.

On *January 12th*, she was feeling easier. The nitro-glycerine seemed to have relieved the heart-pain considerably; but, as she was very weak, she was told to stay altogether in bed and to stop the thyroid. She had had in all three quarters and three halves of a sheep's thyroid; the last dose having been taken on January 10th.

On *January 17th*, the swelling of her features had almost entirely gone, but she was very weak, and sweating profusely. Her appetite was quite gone, her tongue was thickly furred, and she complained of great nausea and much pain over the stomach. The heart-pain was scarcely felt at all. The temperature in the mouth was 98°·6, the pulse 110. Nitro-glycerine stopped.

On *January 23rd*, she got out of bed and nearly fainted. The pain in the stomach was severe, and there was a constant inclination to vomit, but nothing came up. Pulse 108, exceedingly feeble, but quite regular. Hydrochloric acid and pepsin given.

On *January 24th*, as she was no better, she was ordered not to sit up in bed at all, and to take nothing but peptonised milk with whisky every three hours.

On *January 26th*, the pulse and tongue were both better. She was ordered tincture of digitalis, ♏x., thrice daily.

On *January 27th*, Dr Byrom Bramwell kindly saw the patient with me in the afternoon (4·30 P.M.). Her pulse and tongue were both rather more normal, but she did not feel any better.

About 9·30 P.M. she sat up while her bed was being made, and suddenly fainted and died.

A *post-mortem examination* was made, 29th January 1893, at 10·30 A.M., by Dr Byrom Bramwell and myself. Decomposition had already set in to a considerable extent.

Head.—Cerebral arteries atheromatous. Pituitary body enlarged, about the size of a small bean (1 × 1½ cms.), and very firm; its fossa unusually deep. Brain otherwise normal.

Thyroid.—Both lobes looked at first sight about normal in outline, but were extremely flabby and thin (like collapsed bladders), so that they could scarcely be felt with the finger among the surrounding tissues even when they had been exposed by dissection.

Thorax.—No remains of thymus. Pleuræ and lungs normal. Pericardium contained about 1½ oz. of blood-stained fluid. Slight thickening of the mitral valve; otherwise all the valves were normal. The muscular tissue of the wall of the heart was in a state of *extreme* degeneration. It was very pale and brownish in colour, and flabby in consistence. In many places it seemed to be largely replaced by fibrous tissue, and in others its place was almost completely taken by fat, owing to advanced atheromatous changes having obstructed the coronary arteries. Numerous soft atheromatous patches in the first part of the aorta.

Abdomen.—Peritoneum normal. Spleen and kidneys seem normal. Liver much decomposed, fatty, with numerous small, rather dry and firm, yellow areas scattered through its substance (? nature). Stomach and bowel not opened; externally they appear normal. Uterus and ovaries practically normal.

Microscopic Report by Dr Gordon Sanders.

The organs, which were markedly decomposed, had been placed in Müller's fluid. After being hardened, they were embedded in paraffin, and stained variously in Ehrlich's hæmatoxylin, hæmatoxylin and eosin, carmine, and the Ehrlich Biondi stain.

Thyroid was greatly altered in aspect. The gland structure was replaced by fibrous tissue: no trace of the glandular elements remaining, except at one or two points where loculi resembling the normal spaces were seen; these, however, contained no epithelium.

The great mass of the tissue was densely fibrous, with few nuclei, but containing bloodvessels of varying sizes, all of whose coats were thickened, especially the middle and outer, which were studded with nuclei. The lumina of the vessels were in some instances filled with blood, in others were much reduced in size by the proliferation of their coats, and were empty.

Scattered throughout the section were seen groups of small cells, staining deeply with hæmatoxylin, with here and there certain large cells, remarkable in their appearance and structure. These cells, which were larger than giant cells, were stained pink with eosin, and contained numerous dark nuclei (or cells ?), varying in number from two to six, and having the same shape and size as the small cells forming the clusters above referred to. The outline of these large cells was distinct, but they did not appear to be surrounded by any stroma. Their number in a given cluster was variable, but was on the average about five.

Heart.—Marked increase of the connective tissue throughout the organ; at other parts considerable deposit of fat, especially under the pericardium. The muscular tissue, which was much separated by the connective tissue, was generally atrophied. Under a high power the bundles showed distinct transverse striation; but the nuclei were small, and the whole fibres seemed opalescent. The transverse section showed a remarkable appearance. The centre of the fibre seemed replaced by a yellowish substance, around which the muscular fibre was arranged like the rim of a wheel. The fibre was studded with granules of varying size, some highly refractive. The yellow pigment had no apparent relation to the nucleus.

Skin.—The cutis vera was relatively considerably deeper than the epidermis. The stratum corneum was increased, proliferating and desquamating at parts. The rete malpighii was shallow, consisting of but a few layers of cells which did not stain deeply, except at the basement; otherwise the cells were natural. The upper part of the cutis vera showed a layer of dense connective tissue, but the rest of the true skin seemed more open than usual.

The *hair* structures were altered. The sheaths were increased, and contained numerous deeply-stained nuclei, especially the outer sheath. The hair itself seemed short and stunted; the papilla seemed normal. The sweat glands and ducts had their connective tissue increased, but the nuclei of the epithelial cells were small and stained poorly. The sebaceous glands did not show any abnormality.

Liver showed chronic venous congestion. The liver cells were cloudy and stained profusely, at parts not taking the stain at all, but remaining a dull brown colour. Otherwise the stroma and vessels and cells showed the usual appearances of the condition.

Kidney also showed chronic venous congestion. The increase in the amount of fibrous tissue was considerable, but the condition of the epithelium precluded an examination of the parenchyma of the organ.

Superior cervical ganglia and *vagus* presented no noteworthy alteration.

Pituitary body (examined by Dr G. Lovell Gulland) was found to be distinctly congested, the capillaries being distended. In some parts of the gland the structure was quite normal, both as to the arrangement of the cells and as to their general character; the chromophile cells were fairly numerous. In other places there was more even than usual of the acinous arrangement, the lumen of the acini being often occupied by colloid material, and the appearance of the sections being very much like that of the thyroid gland at an early stage of development. A certain amount of this cystic formation is normal in the pituitary body, but in this instance there was more of it than usual. The connective tissue of the gland was quite normal.

Remarks.—While the state of the heart muscle which was found in this case was amply sufficient to account for the fatal syncope, one can scarcely doubt, I think, that the thyroid treatment (or, rather, the imperfect application of it) may possibly have had some influence in hastening the end. The dose of the thyroid was certainly small (2¼ thyroids in three weeks), but still it had already demonstrated the activity of its action by the very marked effect it had produced on the subcutaneous swelling.

The lesson which the case teaches is, not that we should refuse to treat patients with unsound hearts, but that our precautions in such cases should be more stringent. The dose should be much smaller than in more robust cases. The patient should be confined to bed from the beginning of the treatment, and means should be taken to insure that directions as to complete rest and the recumbent position are more strictly carried out than they unfortunately were in the case of my patient.

V.—ON SPORADIC CRETINISM.

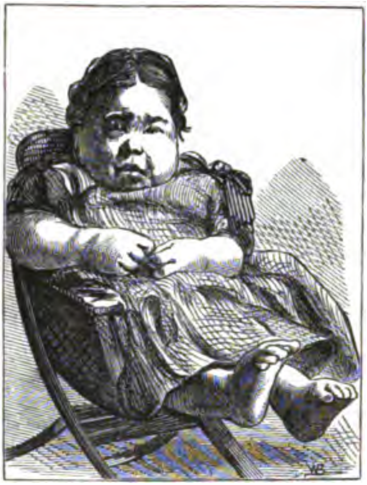
By William W. Ireland, M.D. Edin., Mavisbush, Polton.

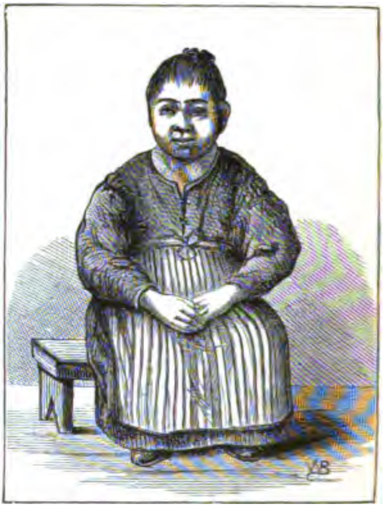
It is pleasing to learn that medical science has now found a cure for one of the least hopeful forms of idiocy. Unluckily it is a rare form. Whether the injection of thyroid juice, or the swallowing of thyroid extract or of raw portions of the gland, may be useful in some other forms is questionable. At any rate, it will be of advantage that medical practitioners should be able readily to recognise cases of this variety of idiocy, in order to select those patients who may be fairly expected to derive benefit from the new method of treatment. For this reason it has been thought expedient to write a description of sporadic cretinism, or cretinoid idiocy.

Dr Langdon Down says that he has means of knowing that the majority of twelve sporadic cretins under his care were procreated while the father was drunk. If intoxication were the sole cause, the affection ought to be common in some villages and towns known to me, but few cases occur in Scotland or with people of Scottish origin. Dr Joseph Bell, the President of the Medico-Chirurgical Society, in the course of the discussion on myxœdema, observed that about thirty years ago he had occasion to see four or five cases of sporadic idiocy in the Carse of Gowrie, and Dr Stalker stated that there was an unusually large proportion of cases of myxœdema in the neighbouring town of Dundee. Sporadic cretinism seems to be less rare in or about London. It looks as if girls are at least as often affected with sporadic cretinism as boys. In the other forms of idiocy males are more common than females.

It is well known that endemic cretinism has a specific cause. It occurs in shut-up valleys, and sometimes in places where the soil is washed down from such valleys, hence in its etiology it bears a striking analogy to malarious fever. The enlargement of the spleen in ague was supposed to be analogous to the enlargement of the thyroid in cretinism. A microbe has actually been indicated in cretinism, but little has been heard of it for some time.

Though the causes of sporadic cretinism are obscure, the symptoms are very definite and characteristic. These cretinoid idiots are generally short of stature, sometimes mere dwarfs. Their growth seems to go on very slowly, or to cease years before the normal time. The figure is broad and squat, the limbs short and thick, the hands and feet stumpy. When well-fed and cared for they often become very stout, and weigh enormously heavy. The complexion is dusky; the skin baggy-looking, as if too large for the body. The surface is wrinkled and sometimes scaly. The head is generally rather small and flattened at the top; the hair commonly sparse. The nose is broad and flat, the nostrils extended. The low bridge of the nose renders more apparent the distance between the eyes. The lips are thick; the tongue is often too large for the mouth, which is kept open. The development of the first teeth is tardy, and the second teeth are very late in coming; the milk teeth persist longer than is customary with ordinary children. In most cases the thyroid gland is totally wanting, and there are irregular deposits of fat in the posterior portions of the neck, which are sometimes so large as to form a little hump on either side. In wasting diseases these fatty enlargements disappear. These cretinoid idiots are generally placid and good-tempered, slow of walking and of speech, very deficient in intelligence, but orderly and obedient. They have a dim appreciation of fun, but rarely cry, and never shed tears. Dr Fletcher Beach allowed me to examine several of these children at the Clapton Asylum for the pauper idiots of London. He also showed me the dissection of one child who had died at the time. The accompanying woodcut, engraved for my book on *Idiocy and Imbecility*, was taken from a photograph kindly given to me by Dr Beach. The reader may compare it with the second figure, the portrait of a female cretin from the valley of the Aosta, aged 19 years.





Bearing these characteristics in mind, it will not be difficult to recognise a case of sporadic idiocy. The symptoms vary within certain limits. In a case which I saw about six weeks ago the child was about the usual height of her age, which was seven years. The head measurements were—

Antero-posterior . .	335	millimètres,
Circumference . . .	490	„
Transverse	330	„
Sum .	1155	„ or 115½ centimètres.

The palate was saddle-shaped. She had twenty teeth, or remains of them, all milk teeth. The tongue was slightly furrowed. She had plenty of dark hair on the head, and there was an unusual growth of short hair down the spine. The skin was clean and smooth. This little girl had more than usual intelligence compared with other cretinoids. She spoke freely, but indistinctly, owing to the high palate. She was good-natured, fond of fun, had an ear for music, but could not count.

It now looks like a strange blindness that physicians were so long in seeing that the common cause of cretinism, of cretinoid idiocy or sporadic cretinism, and of myxœdema, lay in the deficiency or affection of the thyroid gland. In exophthalmic goitre, too, there was often observed a degree of irritability or eccentricity of conduct amounting in some cases to mental derangement.

But pathologists were prevented from more speedily discerning this relation by confident statements that in some cases, both of endemic and of sporadic cretinism, there was no affection of the thyroid. A more rigid scrutiny of cretins always tended to reduce the number of such apparent exemptions, and to show that nearly all cretins had a goitre, large or small. In like manner it has been stated that there are cases of sporadic cretinism where the thyroid seems to be normal, but analogy would lead us to the belief that a closer examination would detect degeneration of the gland. Sporadic cretinism appears to be a congenital or infantile form of myxœdema, as idiocy is a congenital or infantile form of dementia. When we consider the increasing mental torpor which has followed the ablation of the thyroid gland for goitrous tumours performed by Kocher, and the cretinoid condition induced in monkeys by the removal of the thyroid by Horsley, it seems impossible to avoid the conclusion that this gland secretes and pours something into the blood which has a powerful effect upon the nutrition and function of the brain and of the whole organism. It has for years seemed to me that there is too much solidism in our pathology, and that the vital powers of the blood have been too much overlooked.

The blood is not only the nourishing fluid, the plasma from which the whole frame is built up and sustained, but it is the active power in stimulating the function of the organs of the body. As I have before observed,[1] "Unless arterial blood circulate in the brain, mental activity ceases. Not only is the blood needful for repairing the waste of tissue which follows cerebral activity, but arterial blood seems to be a necessary factor along with the nervous tissue in all manifestations of cerebral activity. The blood stands to the brain action as the acid does to the zinc and copper plates in a galvanic pile."

The wonderful effect which has been produced in myxœdema by the introduction of the thyroid juice into the system, whether by transplantation of the gland,[2] by injection, or by the mouth, is a confirmation of these views. In a very short time after the introduction of this material there was increased mental activity and improvement in the bodily symptoms, and this improvement stopped when the thyroid ceased to be administered. Professor Greenfield stated that he had carefully examined the brain in a case of myxœdema, but could detect no morbid change, although he found traces of chronic neuritis in the peripheral nerves, which may perhaps be accounted for by the degenerative changes in the skin.

Some of the brains of cretinoid idiots which have been examined appeared to be healthy to the naked eye. In two cases where a microscopical examination was made by Dr Fletcher Beach,[3] few of the nerve cells of the brain were found to have processes, and these were small and stunted. The nerve cells themselves were generally rounded, and the nuclei usually situated in the centre with a space around.

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[1] *The Blot upon the Brain: Studies in History and Psychology*, p. 321.

[2] This might appear the thoroughest method of treatment; but Schiff's transplantations on dogs were rarely successful, and even when the thyroid was implanted in the new organism it soon began to degenerate. See *Il Progresso Medico*, Numo. 17, 1890.

[3] *Transactions of the International Medical Congress*, vol. iii., pp. 627-630. London, 1881.

Dr Byrom Bramwell has kindly allowed me to examine a little girl under his care affected with sporadic idiocy. This child, who was seven years old, had only grown two inches in two years. Since January, when the new treatment was begun, she had grown an inch in height. There was a very marked improvement in her general health. The skin was becoming smooth. It was scaling off at the feet. She was much more lively and intelligent. From the shyness of the child before a stranger, I was unable to make any test of her intelligence, but it would be unreasonable to doubt the accuracy of the statements of so accomplished a clinical observer as Dr Bramwell. Mr John Thomson kindly showed me the two cases which he had treated. One, a girl of five years, previously of very tardy growth, had gained an inch in stature in nine weeks. There were other gratifying signs of improvement. She was taking one-eighth of a sheep's thyroid twice a week. The other cretinoid, eighteen years of age and only 34 inches in height, had ceased to grow for years, but under the stimulus of the new treatment he had grown two inches in nine weeks. His parents said that he had also become more lively and intelligent. In general, I advise physicians not to be too readily carried away by enthusiastic accounts of improvement from the mothers of such children. Their accounts may require to be toned down to make an accurate description of realities. Nevertheless this method of treatment opens up a hopeful vista in a very sad disease, for which medicine has hitherto been able to do little. Those who have seen a large number of idiots must have observed the prevalence of what might be called the cretinoid characters, at least in the genetous forms. The stature is often short; there is a distance between the eyes, and a broadness of the features. Such characteristics, with a tendency to deafness and stupidity, are said to be more prevalent in districts where goitre and cretinism abound. It is an important question to investigate,—whether a deficiency or degeneration of the thyroid gland occur in many of such cases, and whether the treatment by thyroid transplantation, injection, or feeding will be beneficial.

VI.—A CASE OF SPORADIC CRETINISM TREATED BY THYROID FEEDING.

By JOHN THOMSON, M.D., F.R.C.P.E., Extra Physician to the Royal Hospital for Sick Children, Edinburgh.

(Communicated to the Medico-Chirurgical Society of Edinburgh at the Discussion on Myxœdema, 16th February 1893.

A. C., aged 18 years and 8 months; seen first on December 17th, 1892, with Dr W. H. Miller, whom I have to thank for permission to observe and record the case, and for most kind co-operation in its treatment.

Family History.—His parents are strong, healthy, well-grown people, and temperate in every way; they were not related to one another. All his four grandparents lived to old age. No relative on either side has suffered, so far as is known, from myxœdema or sporadic cretinism. A maternal uncle had, in his youth, an illness which temporarily affected his mind; but with this exception there has been no case of nervous or mental disease in the family, and there is no history of phthisis.

The mother has had seven other children, one of whom died in infancy from pneumonia; the others are alive and very healthy in every way. She has also had two miscarriages. The patient is the fourth child, and ten years intervened between his birth and that of the third; during that time there was a miscarriage (about the third or fourth month) for which no cause was known.

Pregnancy.—At the time of the child's birth the parents were living in a northern district of Edinburgh, close to the Water of Leith. During pregnancy the mother had no accident or fright, and she felt very well, but she noticed that the child moved less than usual. There was nothing wrong with either parent at the time of the commencement of pregnancy.

Birth.—The birth was slow, but not difficult: the child did not breathe for some time after. At birth the child appeared of the usual size and normal in every way.

Past History.—He was given the breast for ten months, and he seemed to his parents to be quite like other children till he was between eighteen and twenty-four months old. His teeth were not late of appearing. The mother did not notice if the fontanelle was late of closing. He was not much later than other children in noticing things, or in talking. He was rather late of walking, but could walk by himself when he was about two years old.

Before the end of his second year his parents noticed that he was not growing; but it was only when he was about four years old that they became anxious about this. Not until he was about six did they realize thoroughly that he was more than merely backward in development.

During the last fourteen years he has grown little, if at all, in height, although he has got broader and stouter. His mental condition has gone back during that time, so that he is said to be much less intelligent than he was at five years old.

When about eight years old, he used to have frequent attacks of epistaxis on slight provocation (*e.g.*, on crying). At these times he sometimes lost a good deal of blood, and he seemed brighter after then.

For many years (at least eight) he has suffered from a cough and wheezing, especially during winter.

State on Examination.—The patient is 33½ in. in height in his stockings, and presents (see Plate I.) the typical ungainly appearance of a sporadic cretin.

The measurements of the head are as follows:—Circumference, 20⅛ in.; from meatus to meatus, 12½ in.; from root of nose to occipital protuberance, 13½ in.

The fontanelles are closed. The hair is of a dark reddish-brown colour, and is coarse and scanty. The complexion is that characteristic of myxœdema—pale, yellowish, and waxy-looking. The eyelids are swollen and puffy. The nose is thick and somewhat turned up. The lips big, thick, and pale, and on the upper one there is an ulcer, due to constant picking; the ears are well formed.

The teeth are all of the temporary set, the second dentition not having begun. The incisors and canines and the left anterior molar are yellow and much ground down, but otherwise normal. The other seven molars are more or less carious, and several are only represented by stumps. The mucous membrane of the gums and throat is pale and coarse, but otherwise normal. The tongue is big, although it does not protrude unnaturally; it is fissured, and has large papillæ.

The neck is very thick, so that it appears short, and on each side of it there is a large flat fatty tumour in the posterior triangle. There are smaller swellings of a similar nature in front of each axilla, but none on the back of the chest. The rings of the trachea can be felt pretty distinctly, and nothing can be made out in the position of the thyroid.

The thorax seems natural in shape, and the heart is normal. Some thickening at the costo-chondroid junctions. There are numerous rhonchi heard all over the chest.

The abdomen is rounded and prominent, and there is a small umbilical hernia. The liver and spleen are not enlarged, and nothing abnormal is felt on palpation. There is slight dorso-lumbar lordosis.

The limbs are short and thick, the hands and feet broad and comparatively large. There is a slight amount of bowing outwards of the leg bones.

The skin, all over the body, is dry, harsh, and scaly. This is especially so on the legs, where large flakes are constantly coming off on to his clothes. There is considerable swelling of the subcutaneous tissue everywhere. There is no hair on the face, pubes, or axillæ. There are very numerous small moles in various situations, and a few flat warts.

The genital organs are small and infantile in form. The prepuce is long and tight. There is no difficulty in micturition. The urine was not specially examined.

The temperature is always considerably subnormal. The patient is very chilly, keeping away from the door in cold weather, and liking to sit close to the fire.

Nervous System.—The cutaneous sensibility to all impressions is dull. The sight and hearing seem perfect; the taste and smell are also good, but probably not very acute.

All the organic reflexes are normal. Bowels very regular. Micturition is normal; but sometimes, especially if he is cold, he goes very long without making water (even fifteen hours), apparently forgetting to do so. If he goes too long he is apt to wet himself. The knee-jerks are well marked.

Mental Condition.—His intelligence is in most respects like that of a child of less than three years old. He can go little messages into the next room. He can repeat by heart one or two verses of hymns. He can name the numbers up to ten, but often misses one, and he does not seem able to count objects. He cannot say the alphabet, but knows some of the letters by sight.

His voice and laugh are very peculiar—loud, harsh, cracked, and unchildlike. His enunciation is indistinct and curiously deliberate. When he is in a happy frame of mind he can use a good many words; but sometimes it is difficult to make out what he wants, and he cries with vexation apparently when unable to express himself. With strangers he is extremely shy of speaking, even when quite friendly.

He is very fond of music, and sings a good deal in a sort of a way; when joining with others he can sing the tune correctly.

He notices a good deal more than one would think from his very stupid expression, and he gave, *e.g.*, to his father a tolerably intelligent account of his being clinically examined for the first time by palpation, percussion, etc.

He is generally tolerably happy, especially if taken notice of and played with; but if he is left to himself he sits apart and gets dull and torpid, not appearing to notice things or people. He often amuses himself with a bat and ball. He is somewhat irritable if teased, and shows his annoyance by crying out. He is not demonstrative in his affection, but he knows very well those who are kind to him, and shows marked preference accordingly. He has a doll to which he is much attached. He is also especially fond of the cat, and, indeed, of all animals; and he always wants to stroke them, and seems to have no fear.

His memory is pretty good. He recognised at once a sister who had been absent for five years.

He is very particular about having everything neat and tidy, and about the cleanliness of his clothes and person.

He sleeps heavily and very long—usually 12 to 15 hours; and his mother says that he would sleep all day sometimes if he were left alone. He is especially drowsy in cold weather.

His muscles, although prominent and hard, are very weak, like those of a young child. He cannot grasp an object very firmly, and is very easily knocked over. His gait is peculiar and waddling.

Treatment.—He was ordered a quarter of a sheep's thyroid by the mouth twice a week. [By mistake he was twice (December 20th and 23rd) given a double dose (half a thyroid).]

Progress.—On *January 1st* (after two halves and two quarters) he began to suffer from headache and pains in the belly, back, and feet, and from sleeplessness and restlessness at night. The pains only began about 11 P.M., and seemed pretty severe. They lasted all night, but did not trouble him during the day. His appetite failed him entirely, and he stayed mostly in bed.

January 11 (after two halves and two quarters).—The headache and other pains are no better. His appetite has improved. He has suffered twice from hiccough, which he never had in his life before. His limbs seem to be a little tender, and he cries when his mother puts his arms back in dressing him. He says his hands are sore, and he slaps them to make them better. His face and body are distinctly less swollen than they were. To have an eighth of a thyroid twice a week.

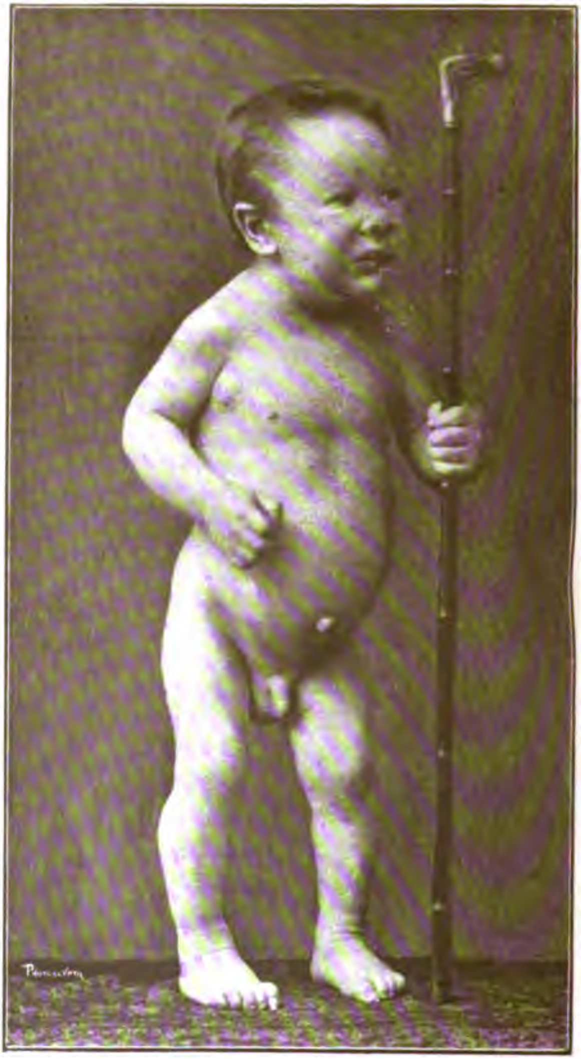
January 14.—Pulse 140, weak and soft; respirations 32; temperature (in axilla), 98°·8. The swelling is getting rapidly less, and the skin is very much softer than it was; but as the patient is still restless at nights, and evidently feels ill, the thyroid treatment is to be stopped.

January 24.—The headache has ceased, and for three nights he has slept well. Pulse 110; temperature (in axilla), 98°·5. He has greatly improved in appearance, and his demeanour and complexion are much more childlike than they were. The supraclavicular and other fatty swellings have disappeared. His mother says that he pronounces his words more distinctly, and that he is much more cheerful than she *ever* saw him before. Appetite good. Ordered to resume taking one-eighth of a thyroid twice a week.

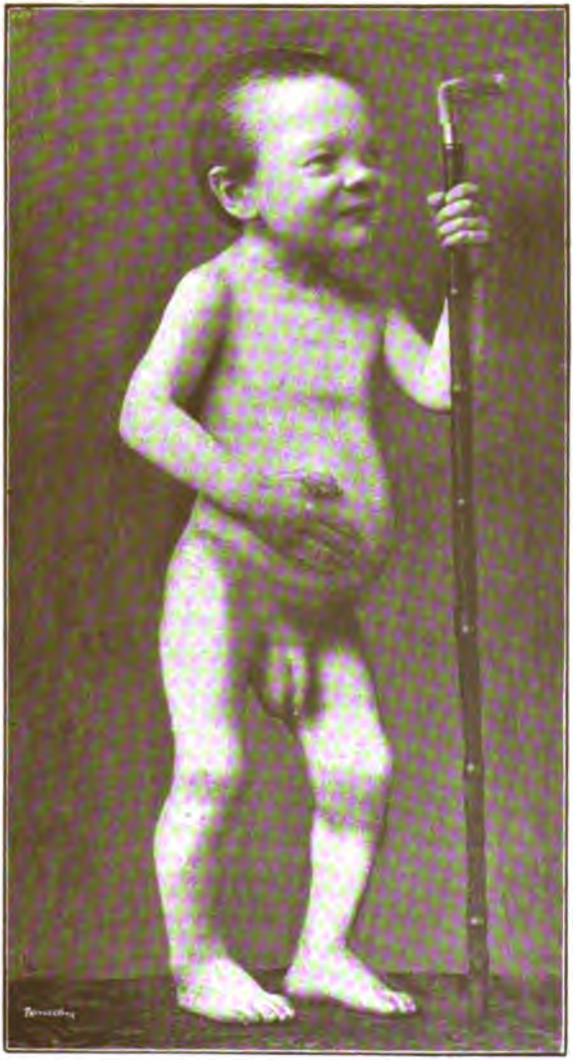
February 16.—Shown at the meeting of the Edinburgh Medico-Chirurgical Society.

February 25.—During last month he has rapidly improved in almost every way. His temperature keeps normal (98°·2–98°·4). He has grown *two inches in height*, measuring now 35½ inches. His skin has quite changed its character, being almost as soft as that of a healthy child. Mentally, his parents say, he is distinctly brighter. He is, however, much thinner, and seems weaker than he was; and his bronchitis is worse. This last is due to his constantly running to the outer door, which formerly he used to shun because of his sensitiveness to cold. As it appears that his present rate of growth is probably of itself a source of danger, he is now to take only one-sixteenth of a gland twice a week.

March 22.—He has been exceedingly bright and well since last note (with the exception of an attack of diarrhœa, brought on by eating too much toffee). His appearance has wonderfully improved (see Plate II.). During the last three weeks he has not grown at all in height. This apparent arrest in the rapid growth formerly observed may be partly due to the smaller dose now taken, but seems mainly owing to the fact that the bones of his lower limbs



A. C., aged 18 years and 8 months, at beginning of thyroid treatment, Dec. 25th, 1892.



A. C., aged 18 years and 11 months, after three months of thyroid treatment, March 22nd, 1893.

are bending very considerably from too much standing and running about. Recommended to try cod-liver oil.

April 1.—Improving steadily, but cannot take cod-liver oil in any form because it makes him very sick. He has been kept off his feet a good deal, and has grown a quarter of an inch since last note. The two lower anterior molars are being pushed right out, apparently by the approach of the second set of teeth.

April 12.—General improvement continues, but he has caught a little cold, and his bronchitis is worse. He now measures fully 36 in. His hair is softer, more plentiful, and of a darker, less red tinge than before treatment. He now seems to have no inclination to sleep longer than the other members of the family.

Remarks.—Although the therapeutic interest in this case is, let us hope, little more than beginning, it seems desirable to publish it now, in order to draw attention to the marvellous benefit which we may expect from thyroid treatment, even in advanced cases of sporadic cretinism.

A comparison of the Plates shows, even more strikingly than the notes do, the radical change which the patient has undergone.

In Plate I., in spite of his infantile proportions, there is a look of premature maturity (if one may say so) about his figure, and even in his attitude there is a suggestion of decrepitude.

In Plate II., his whole aspect is changed. The dull apathetic glance is gone, he " eyes the world now like a child," and even in the way he stands and grasps the stick he is holding there is something of vigour and hopeful vitality, so that one can hardly resist the conviction that (like a child) he has a long process of bodily and mental growth and development in front of him.

Ordinary nineteenth century therapeutics yield us no analogy to guide us in our conjecture as to how long the improvement so vigorously begun is likely to continue, or how far it is likely to go. Only time can show. But when we note the change in his appearance and character wrought in the short space of three months, we are certainly tempted to rather a sanguine prognosis.

VII.—ELEPHANTIASIS ARABUM VULVÆ; AMPUTATION; RECOVERY. WITH ZINCOGRAPH.

By J. HALLIDAY CROOM, M.D., F.R.C.P. Ed., F.R.S.E., Physician to the Royal Maternity Hospital; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

THOUGH elephantiasis arabum is a well-recognised pathological condition, yet its occurrence in this country is rare, and the recorded cases are correspondingly few; and much more so is this the case where the seat of the affection is in the female genitals, so that a report of the following case is of interest. True elephantiasis affecting the vulva is rarer than at first appears on examining the literature of the subject, since many cases have been recorded as such which on examination prove to be not really elephantiasis, but simply conditions of exaggerated lipoma or fibroma, or even some tertiary syphilide which bore a close resemblance in external appearance; and in some others, while the pathological description seems to correspond to the recognised appearance of elephantiasis, there is associated with the growth of the tumour a history of previous or concomitant venereal disease.

Elephantiasis arabum vulvæ is a disease described as occurring not infrequently both in India and Barbados; but that it is not confined to any particular locality is sufficiently attested by the records of occasional cases in French, German, and other European literature on the subject.

The case now recorded was that of a married woman, aged 32, who had borne three children, the youngest of whom is six years old. Apart from physiological amenorrhœa her menstruation had always been regular. At the age of 13 she suffered from tubercular destruction of the glands of the neck, the evidence of which is manifested by the presence of very numerous cicatrices in that region. With the exception of this ailment she enjoyed good health up till about five years ago, when the glands in the groin of the right side suppurated and broke down, healing slowly and leaving the usual scars. Twelve months thereafter she first noticed the commencement of the swelling in the right labium, and this has continued to increase. About two years ago the left labium commenced to hypertrophy, and this was also preceded by the destruction of several of the glands on the corresponding side. This enlargement of the left labium has not, however, progressed to any extent. The tumour of the right side is well represented in the accompanying Zincograph, which was taken when the patient was completely anæsthetised. Towards the mons veneris, and over its most dependent part, the tumour is hard and nodular or *papillomatous*, but at the side where it is in contact with the thighs it is soft and smooth, or *glabrous*, to adopt the usual nomenclature.

To indicate its dimensions more exactly than can be shown in any diagram, the measurements were found to be—antero-posterior diameter, 12 inches; lateral, 6 inches; and vertical, 6 inches. The base of the attachment, although being a long one, is somewhat narrower than the dependent part of the tumour, so that it is fairly movable, and might be described as faintly pedunculated. At times the patient suffered great pain in the affected part, and on other occasions it became inflamed and erysipelatous, she herself describing this as "the rose."[1]

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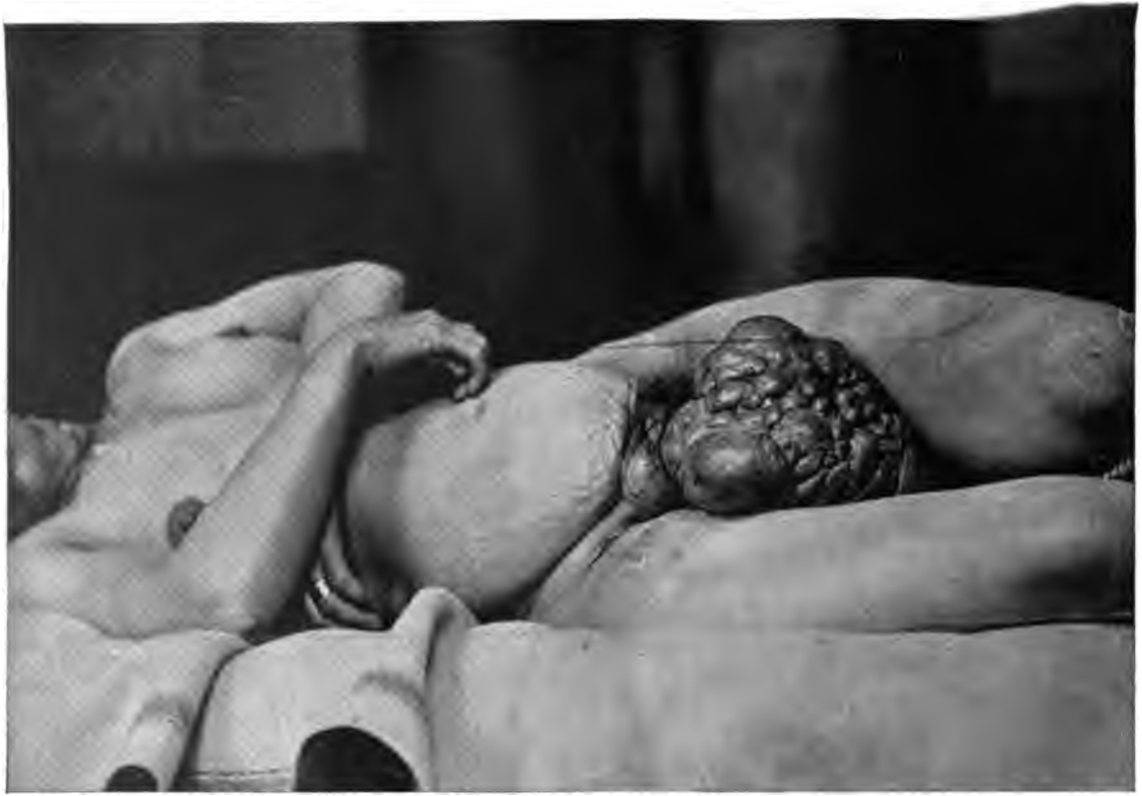
[1] It is of interest to note in this connexion that in some of those islands where elephantiasis is not uncommon the disease itself receives the name of "the rose" from the aborigines.



ELEPHANTIASIS ARABUM VULVÆ.

After elevating the tumour so as to cause as complete depletion as possible, the mass was removed by a single sweep of a large amputating knife, and thereafter the individual vessels were dealt with *seriatim*, the hæmorrhage being inconsiderable. As the disease, however, had spread up over the mons veneris, a large quantity of redundant tissue had to be removed by dissection, which added very considerably to the extent of the wound and the difficulty of the operation.

The edges were then drawn together and sutured, and as there was a copious discharge from the gelatinous-like tissue, a drainage tube was introduced at the most dependent part of the wound. This was removed at the end of two days, and the patient has made a good recovery.

As to its pathology, the great bulk of the tumour appeared to consist of a gelatinous mass diffused over the area of swelling, and enveloped in a layer of skin and epidermis, which had not, to all appearance, undergone much change. This tissue on examination was found to consist of a hyperplasia of the cellular elements of the connective tissue and lymph spaces between, enormously dilated, from which a watery fluid flowed on slightest expression, and had originally consisted of the deeper layer of the dermis and the subcutaneous connective tissue. No great thickening of the epidermis was noticeable on microscopic examination, but the papillæ were larger than normal and occurred at much wider intervals, whilst in some parts of the substance of the epidermis there were present dilated lymph spaces. Nerve bulbs were awanting in the parts examined.

Those portions previously described as being hard and papillomatous consisted for the most part of dense fibrous tissue covered by a hypertrophied epidermal coating.

Cornil and Ranvier consider elephantiasis of the vulva histologically under three principal forms:—

1st, Where the entire derma is hypertrophied and assumes embryonic characters, in the midst of which are greatly dilated lymph spaces.

2nd, That which succeeds repeated œdema and affects wide areas when there is general stagnation of the lymph system. In this variety especially there occurs often a fibrous alteration in the ganglia.

3rd, Enormous increase in the derma, with proliferation of all its elements, and dilatation with lymph of the intervening spaces.

Whether associated with the *filaria sanguinis*, or having its origin from any other cause, in all varieties the constant lesion is a dilatation of the lymph channels, and without doubt this occurred in the case now reported, and probably had its initial causation in the destruction of the lymphatic glands and the consequent obstruction of the lymph stream, accompanied by stagnation and accumulation of lymph.

VIII.—REMARKS ON RAYNAUD'S DISEASE, WITH CASES.

By CHRISTIAN SIMPSON, M.B. Edin.

MUCH has been done, both on the Continent and at home, to elucidate this malady since Raynaud first published his monograph in 1862. He at that time classified the disease under five heads, which to a great extent are indicative rather of the degree than of the etiology of the individual case. The groups are as follows:—

1. Syncope and local asphyxia in the simplest form.
2. Local asphyxia and superficial gangrene, with predominant nervous element.
3. Symmetrical gangrene of benign form.
4. Symmetrical gangrene of grave form.
5. Symmetrical gangrene with circulatory lesions, as seen in autopsy.

What is required is more definite knowledge of the cause acting in each case, so that therapeutics may be more successfully employed. I select the two following cases out of several, as they present so many important features:—

CASE I.—Miss B., aged 60, complained of giddiness and faintness, some paresis of left leg, and slight aphasia. Not been well for a few days.

History.—Twelve years ago, when 48, she first became subject to symmetrical dead fingers, accompanied with much pain. Ten years ago epistaxis occurred, and about this time a slight injury to a toe was followed by profuse bleeding; attacks of epistaxis frequent, and without apparent cause. She was somewhat alcoholic. Never had chilblains. The condition of hands and toes had not varied much lately; enjoyed fair general health. The duration of the attacks of lividity and pallor varied, but pallor follows washing, and is rapidly succeeded by cyanosis, which lasts much longer. She is often unable to perform domestic duties on account of the pain after washing.

State on Examination (*Feb.* 24, 1891).—Patient seen three hours after the aforesaid symptoms. Was strange and dazed; no facial nor other marked paralysis, but paresis of left arm; arms and hands tremulous; tongue trembling and deviating to the left side slightly; feet colder and hands warmer than general body heat. Pulse regular, fairly full, 80 per minute; no marked increase of tension. Still some aphasia; left-sided headache; breathing quiet and regular; pupils equal, and react normally. Liver congested and tender; bowels constipated. Superficial plantar and patellar reflexes exaggerated, the former markedly so. When taken ill today the hands were almost black, face pale, sight dim, and left-sided headache. Fingers affected symmetrically; nails overgrown, being too tender to cut. Around the pulp of the tips a thick layer of epidermis is cracked and peeling off, leaving the true skin exposed and hypersensitive, and cicatricial in appearance. Fingers livid, but not œdematous; some toes in a similar condition, though nails not so sensitive. Ears and nose normal, seldom suffer; skin of face soft and pliant. Systems, other than nervous, alimentary, and locomotory, normal.

Feb. 25.—Speech almost right; no giddiness, though still left-sided headache. Hands not been pale, but livid this morning. Urine about 10 ounces; sp. gr. 1025; peculiar high colour; no blood, no sugar; albumen doubtful.

March 1.—Fingers better; able to have nails pared. Troublesome spasmodic cough from 3 to 5 A.M. Headache gone.

March 3.—Been yawning all day, though cannot sleep; still periodic cough; hyperæsthesia for taste for sugar; other tastes normal. Fingers and toes much better, also liver.

March 6.—Cough ceased, but replaced by watery diarrhœa at same hour. Yawning passed off, having lasted two days and a half. After this date patient's condition varied from day to day, and need not be detailed.

CASE II.—Mrs L., aged 64.

History.—About eighteen or twenty years ago the middle finger of the right hand became occasionally pallid, but never painful or livid. This condition did not seem serious till five years ago, since which date it has recurred every winter, and both hands are now affected. The skin of the fingers up to the first phalangeal joint is in a condition of morphœa, and the nails of the right hand appear to grow faster. Both sides seldom affected simultaneously; left foot sometimes painful and livid. Ears normal, but nose livid at times. Common sensation of fingers greatly dulled, the tips being quite anæsthetic. Epistaxis occurred for the first time on January 13, 1891; no exciting cause known; was sudden and copious, recurred in twelve hours when defæcating, and again on the 17th, after which date it ceased. Other organs healthy. Her eldest daughter has occasional attacks of dead fingers, to a slight extent, in both hands, and is a cold subject on the whole.

Remarks.—The age of these two cases is above the average, and I have notes of two other cases: one, 56, a female; the other, 73, a male. Pepper also records two cases over 50. Case first had continued in an active condition for twelve years, though essentially chronic; while the second was first noticed twenty years ago, though only for a short period of her sexual activity, and did not influence the climacteric. Heredity is not usually noted, but it appears in the case of the second one's daughter, and also in a case I reported in the *British Medical Journal*, April 1891.

Locally these two are similar except in the difference in the trophic state and sensibility,—one having anæsthesia and morphœa with apparent over-growth of nails, the other hyperæsthesia and over-growth. Scleroderma was absent in these, and also in twelve others I have seen.

Evidence of disordered cerebral circulation was most marked in the first case, where, closely following on one another, were an incomplete left hemiplegia, or rather hemiparesis, associated with slight aphasia and left-sided headache, though patient was right-handed. Then periodic cough, persistent yawning, and insomnia were succeeded by periodic diarrhœa at the same hour. Hyperæsthesia for the sense of taste for sugar was the sole special sense abnormality. These varying symptoms can only be accounted for by corresponding attacks of cerebral anæmia or congestion affecting different areas of the brain, as they are compatible with no single lesion.

Epistaxis is not a frequent complication noted in books, and it is of some import, as I have notes of four cases in which this hæmorrhage was the chief symptom, at some stage of the diseases.

From a careful study of many recorded cases, it appears to me that another method of grouping might be an advantage:—

Group 1st, consisting of arteriolar spasm, irregular, but usually symmetrical, causing the ischæmic stage, subsequent paralysis causing the cyanotic stage.

Group 2nd, consisting in congenital abnormality in the size and distribution of certain arteries, with or without cardiac disease. This is usually unilateral.

Group 3rd, consisting in spasm of veins or venules, resulting in venous congestion, tumidity, venular varix, and tendency to bleed.

Group 4th, where certain neuropathic conditions may be actually found, or may be considered hypothetical.

Group 5th, in which one or more of the above groups may combine or pass into the other.

By some such modification of Raynaud's classification, the cause acting in each case may be more readily analysed and treated. The largest number of cases is in Group 1st, varying in severity from the not infrequent dead fingers to rare cases of complete gangrene of a portion of an extremity (Affleck, *British Medical Journal*, December 1888, Case 1).

Visceral arteries may be affected, as when pulmonary catarrh, hæmoptysis, and actual loss of lung tissue takes place, or when paroxysmal hæmaturia or hæmoglobinuria occurs. Dr Bristowe believes that the only relation between hæmoglobinuria and Raynaud's disease is the fact of their being both apt to be induced by exposure to cold. But in the light of the most recent researches by Prof. Semmola, it would appear that the true exciting cause is a faulty physiological chemistry, resulting in an excess of uric acid and other waste products in the blood, which may produce a condition of hetero-albuminæmia and consequent hæmoglobinuria.

The cause of this faulty chemistry may be disturbed action of the sympathetic acting on the functions of the skin, liver, and other excretory organs. So long as the individual is not exposed to cold, such faulty chemistry may be insufficient to produce actual disease. Mr Hutchinson remarks that "all persons are potentially the subjects of Raynaud's disease, but it is only when the natural proclivity to pass through the various stages becomes exaggerated abnormally that the individual can be said to suffer from 'Raynaud.'"

Group 2nd contains a certain number of cases with definite congenital arterial abnormality. The parts supplied are in a state of lowered vitality, and more easily succumb to an exciting cause. This may be accompanied by cardiac disease, probably congenital (Affleck, *British Medical Journal*, December 1888, Case 2).

In Group 3rd the cases are not so specially remarked. The ischæmic stage is often absent, and is replaced by a state of almost constant venous congestion, tumidity, venular varix where the skin is thin, as in the ears, and tendency to bleed from mucous membranes. This may be due to venous or venular spasm, with consequent great increase of blood in a terminal situation. Gangrene is more apt to be a result of such prolonged asphyxia than of repeated attacks of syncope. The arteries are still acting, or may even be somewhat dilated, thus allowing of a free flow of blood to the area, and hæmorrhage may readily occur. Epistaxis seems to be the most frequent, though melæna, hæmoptysis, and hæmaturia have also been noted from mucous membranes, while trivial abrasions of the skin are followed by comparatively severe hæmorrhage. Menorrhagia is unusual; amenorrhœa is the more common state (Weaver, *Lancet*, 1888). Retinal hæmorrhages are absent usually, though the retinal veins have been noticed to be distended at times and pulsatile (? abnormal). This absence of retinal hæmorrhage is interesting when compared with its occurrence in some hæmopoietic diseases (Simpson, *British Medical Journal*, 1891).

Group 4th.—(*a.*) Peripheral neuritis has been described as a cause or complication. The usual symptoms and course of Raynaud's disease do not accord with those of ordinary peripheral neuritis, as in the former there is, primarily at least, more limitation to the vasomotor element than in the latter, while the varying and regular stages which are often passed through servé to distinguish it also from so-called trophic lesions, which are usually progressive and more rapidly destructive to the tissues, and accompany some gross nerve lesion. At the same time, many trophic changes occur in the course of some cases of Raynaud's disease, such as changes in the nails, morphœa, scleroderma (Hutchinson), while actual gangrene is not infrequent to varying degrees.

(*b.*) Ascending neuritis, the result of tissue irritation, may be difficult to distinguish from (*a*). In Dr Affleck's first case the degeneration was seen to affect only certain strands in the nerve,—the whole nerve was not neuritic.

(*c.*) In asylum practice a certain number of cases are seen which may be due to a primary lesion of the vasomotor centres in the brain. They are usually cases of acute mania, general paralysis, epilepsy, or dementia. It is curious that the melancholic, or a patient in stupor, seldom has typical Raynaud's disease, though his extremities are often livid and swollen.

(*d.*) Gross nervous lesions may be classed under (*c*) such as brain tumour, G.P., or the result of traumatism.

(*e.*) It appears to me that an affection of the sympathetic system will be found to be the most frequent cause of the disease, but this may be only functional disturbance, and post-mortem evidence is very scanty. When it is recollected that the sympathetic system has practically the full control of the arteries and arterioles, it will readily be admitted that any disease affecting these in such a manner cannot come about except through some interference with the sympathetic nervous supply. The results of experiments on a rabbit's ear, due to interference with the cervical sympathetic ganglia, are well known, while some consider that exophthalmic goitre is of sympathetic origin, and treat accordingly. Morbid blushing and flushing are in the same category. The difference between the result of the increased blood-supply along the auricular and thyroid arterioles and the increase in the cyanotic stage of Raynaud's disease may be, that in the former there is coincident aural and glandular hypertrophy, the anastomosis is sufficient, while in the latter the deoxygenized and over-acid blood is not sufficiently rapidly removed, a condition of asphyxia and malnutrition of the tissues arises, which may pass on to gangrene. Many symptoms may be accounted for by a sympathetic lesion: its terminal and symmetrical distribution, the inconstancy of its various stages, its visceral complications, and the fact that the other fibres in the nerves are not primarily affected.

The sympathetic lesion is most probably only functional, being of the nature of a shock or intoxication, putting the regulating functions of the cells out of gear, and thus allowing of contraction and dilatation of the vessels in the affected areas to take place, in obedience to extrinsic or abnormal hæmic stimuli, rather than to intrinsic nervous and normal hæmic ones, which should act and control normally. Whether this be the result of some hereditary or acquired neurosis, a uric acid or gouty diathesis, or the inevitable result of imperfect assimilation of our food and imperfect excretion of waste products, yet remains to be proved.

Some cases of bilateral gangrene of the lower extremities, the result of traumatism to the abdominal sympathetic, have been reported as instances of Raynaud's disease, but whether these should be classed as such is doubtful, though they may be included in section (*d*) or (*e*) of Group 4.

These irregular contractions and dilatations in the vascular system have a strong analogy to the condition of athetosis in the musculo-motor system, and as the lesion in the latter is supposed to be rather an impaired action of certain cells in the region of the optic thalamus than any gross lesion actually in that area, so a similar condition of the cells in the sympathetic ganglia may be supposed.

Group 5th, in which various combinations and transitions may be placed, does not require any special detail.

The next important point is, how to apply treatment rationally from this standpoint of classification. The main drugs to depend on are vaso-constrictors and vaso-dilators, used according as to whether it is desired to increase or diminish the blood-supply in any given case or stage thereof. General tonics, hypodermics of arseniate of strychnia, electricity, equable temperature of the part and body, good but not too nitrogenous a diet, and free use of the excretory organs, are also great aids. Electricity is specially useful in cases where there is much stasis. What current, where and how it should be applied, cannot be now discussed; suffice it to say that as a rule the constant current, applied so as to produce a descending current along the spine, or applied to the cervical sympathetic, is the one from which the most satisfactory results have as yet been obtained; but the interrupted current may also be useful. The benefit to be derived from mercurials (from their reputed action in aiding uric acid excretion and lowering pulse tension) has yet to be shown. Calabar bean and hamamelis may also be of service where there is possible venous spasm and venous stasis. Codeia is the most suitable opiate, unless the pain is very severe, as it acts more especially on the sympathetic, and does not derange the appetite and bowels so much as morphia or opium.

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REVIEWS.

Diseases of the Eye. By GEORGE A. BERRY, M.B., F.R.C.S.E. Second Edition. Edinburgh and London: Y. J. Pentland: 1893.

MR BERRY'S treatise on *Diseases of the Eye* has already reached a second edition, a fact which shows that the book has been highly appreciated. This approbation is well bestowed, for its pages are full of important facts, both clinical and scientific. The new edition presents considerable changes as compared with the former, chiefly in the direction of better arrangement and more diagrams, while the general plan of division into three sections is retained. The first chapter is now wisely devoted to the Examination of the Eye by various methods, and is one of the best chapters in the book. For special commendation we would single out also those on Glaucoma and on Sympathetic Inflammation. In them we have presented to us, in very readable form, many interesting facts and the views of certain leading foreign oculists. Mr Berry's wide reading in foreign ophthalmic literature enables him to do this with unusual felicity. His remarks on Colour Blindness are very thoughtful and very valuable.

In regard to sympathetic ophthalmitis, Mr Berry seems to place great reliance on Deutschmann's views, which he founded on experiments of his own; but other observers, it must be recollected, have failed to agree with Deutschmann's results or conclusions while repeating his experiments. He agrees also, we observe, with Dimmer's recently published explanations of the light streak on arteries, and the different origin of that on the veins.

If Mr Berry's work has a weak point, it is in regard to treatment, which is frequently rather touched upon than discussed. Now, this ought not to be, for many a "student of ophthalmology" will turn to its pages to obtain guidance in treatment. Our remark does not apply to operative treatment, for the chapter on Operations is one of great value, and is well executed. We would suggest for future editions (which the work deserves to reach and will reach) a larger sprinkling of diagrammatic figures showing lines of incision, course of stitches, etc.; these make the written description so much more easily understood. In this chapter we are surprised to find no mention of Knapp's "rolling-out" operation for trachoma, of which other oculists give glowing accounts. Mr Berry should also express his views on the extravagant claims of the "partial" tenotomists.

The author gives in a few brief sentences the reasons, thoroughly sound, for his adherence to the performance of iridectomy as a step in the extraction of cataract. They should be read by every waverer between two opinions. As Mr Berry pithily puts it, "the game"—of running so great a risk for so slight a cosmetic gain—"is not worth the candle."

One particular feature of the book is the number (197) and excellence of the diagrams, a considerable selection of which are new to this edition. These are almost all good; some are elegant in drawing and well finished in regard to colour, while those in black and white, especially the mathematical figures, are beautifully executed. Of the coloured diagrams a few are not worthy of the excellence of the remainder,—*e.g.*, Nos. 7, 14, and 73. A useful addition has been made by the introduction of a number of ophthalmoscopic sketches in monochrome.

Since it is his view that such a section should form part of his work on *Diseases of the Eye*, the author has done well to make the mathematical portion so good and so complete as it is. However opinions may differ as to the wisdom or advisability of the presence, in a strictly medical book, of such an alarming coruscation of mathematical signs as "$\sin x (\cos i \cos r + \sin i)$," or "$\mu_0 f' \tan \alpha = \mu_n f \tan \alpha$," there can be no question as to the skill and intimate knowledge of optics with which the problems are treated and elaborated,—sometimes in a manner quite novel. In this section also there is a considerable amount of new material.

In the new edition the whole style of the book has been greatly improved, and passages where the sense had not been expressed with sufficient clearness have been made more perspicuous. We are glad to see that Mr Berry retains the correct spelling of the word *lachrymal*, and that he almost uniformly avoids (not invariably, for see page 84) the use of such hybrid words as *pericorneal*. One might as well speak of *extra-trophy* of tissue.

The letterpress is beautifully clear, and the proofs and index have been carefully attended to,—not so carefully, however, as to completely exclude blunders, notably *anterior* for *posterior* on page 129.

Mr Berry had already a high position as an oculist, and his reputation will be increased by the issue of this second edition.

Malignant Disease of Throat and Nose. By DAVID NEWMAN, M.D., Laryngologist to the Glasgow Royal Infirmary, etc. Edinburgh and London: Young J. Pentland: 1892.

DR NEWMAN is not only well known as a surgeon and laryngologist, but as an author. Besides many papers contributed to the medical journals, he has published an interesting monograph on Malpositions of the Kidney and a book on the Surgical Diseases of the Kidney. His latest work, which we have now under review, deals with a subject of great importance—namely, malignant disease as met with in the œsophagus, nose, and throat—and may be described as a clinical and statistical study. While in a book written from the clinical standpoint the author's own experiences and observations must of necessity bulk very largely, yet in this work the views of others on all important points have not been omitted; and the carefully-prepared bibliography which is appended will be found of great service to the reader.

Five chapters are devoted to the consideration of strictures, malignant and non-malignant, affecting the œsophagus.

The next five chapters deal with malignant disease of the larynx, a subject of great and ever-increasing interest. The treatment, and specially the operative treatment, of such cases is discussed in a thoughtful and comprehensive manner, and the general lines laid down for guidance in operating will be found of great value. The early symptoms and diagnosis, and the appearances of this disease, appear to us not to have been considered with the same fulness and detail which we observe in other parts of the book; and the number of illustrative cases narrated seems to us small in proportion to the importance of the subject.

The remaining five chapters contain a full and valuable description of malignant disease in the nasal fossæ and in the tonsils. In the latter site, Newman holds that malignant disease is very much more common than is generally stated, with which opinion we quite concur; and he points out the importance of recognising this fact, in order that early diagnosis may give the patient the chance of operative treatment before it is too late.

The author has used his extensive experience to good purpose, and discusses his subject in an able manner, and places his views before his readers in a clear and logical manner. The book is essentially a practical one, which cannot but be of service to those called upon to treat and alleviate a most distressing class of diseases.

A Manual of Diseases of the Ear. By GEORGE P. FIELD, M.R.C.S., Aural Surgeon to St Mary's Hospital, etc. Fourth Edition. Illustrated. London: Baillière, Tindall, & Cox: 1893.

WE had occasion about ten years ago to notice in these pages the third edition of this work, and now, after perusal of the new edition, we see no reason to alter the favourable opinion which we then expressed of the book as a whole. Otology has made great advances in the last ten years, and hence it has been necessary practically to rewrite this book in order to bring it up to date. At the same time, while much new matter has been added to it, the general arrangement of the work remains unaltered. Among the more important additions, we may mention a chapter on Chronic Suppurative Inflammation and its Results, in which disease of the mastoid and intracranial disease, as well as the operations that may be necessary in these conditions, are dealt with at much greater length than they were in the former edition.

The volume is illustrated by a number of woodcuts and coloured plates, the latter exhibiting the membrane in various diseased conditions as if seen through a speculum. Some of the plates are good, but several are wanting in accuracy and clearness of definition, and do not come up to the best style of modern colour printing.

The book is written by an authority on his subject, and may be recommended as a good text-book for the student, and a safe and reliable guide for the practitioner.

The Hygiene of the Ear. By Dr VINCENZO COZZOLINO, Professor in the Royal University of Naples. Translated from the Fifth Italian Edition by JAMES ERSKINE, M.B., Glasgow. London: Baillière, Tindall, & Cox: 1892.

THIS small work should do much to dispel the ignorance which still subsists as to the organ of hearing, and should tend to prevent the harm which so often results, on the one hand from meddlesome or improper interference with the ear; or, on the other hand, from criminal delay in applying proper treatment in pathological conditions of the ear. It has already appeared in six different languages, and will doubtless have as good a reception here as it has had in other countries. We think this small treatise should be in the hands of every medical man.

Some Lectures by the late Sir George E. Paget, K.C.B., M.D., F.R.S., Regius Professor of Physic in the University of Cambridge. With a Memoir. By CHARLES E. PAGET. Cambridge: Macmillan & Bowes: 1893.

THERE are some men whose lives are much greater and more instructive than their works, or their *remains*, to use a quaint old phrase well known to the experts in religious biography.

The short memoir which is prefixed to these Lectures gives the briefest possible sketch of a life which was remarkable, not only because it was lived by a high-souled, courteous, wise Christian gentleman, but also because it shows in how many ways such an example can elevate the whole tone of the profession in a great university town. The extraordinary development, not only of the natural science tripos, but of medical education, at Cambridge, is largely due to Sir George Paget, and to his great colleague Sir George Murray Humphrey. As Fellow of Gonville and Caius, as Bursar, Examiner, Linacre Lecturer at St John's College, and Regius Professor of Physics in the University, he filled every teaching office possible; as Hospital Physician at Addenbrooke's, and Consulting Physician for both town and country, he was a noted healer. In the domain of medical politics he was a Member of the General Medical Council and twice its President, and he was President of the British Medical Association. Honours of all kinds were showered upon him, and borne with modesty and self-respect. A many-sided, useful life, ended by an easy, rapid, and painless death in his eighty-fourth year. A most characteristic photograph of the calm, wrinkled old face, with its prominent, sagacious nose, and firm, yet kindly mouth, recalls most pleasantly the grave old man. The remains consist of four lectures—one on the Ætiology of Typhoid Fever, two on Alcohol as a Cause of Disease, and one on the Mental Causes of Bodily Disease. They all exhibit clearness and sound judgment, well-reasoned opinions illustrated by characteristic cases. But nowadays the progress of medical science is so rapid, and the word counters which are tabled to express theory or dogma are so fresh from the mint, that the reader will be apt to feel that the sound sense of the lectures is a generation too old, and that they would hardly *pay* as a preparatory study for the examination of the University of London. Had the whole volume been a memoir, it had been all too short; and yet the long useful life was not eventful, and the forty-four years of physician's work at Addenbrooke's left more impression on the patients and pupils than can be imprisoned between the boards of a printed book.

A Manual of the Practice of Medicine, prepared Essentially for Students. By A. A. STEVENS, A.M., M.D., Instructor of Physical Diagnosis in the University of Pennsylvania, etc. Illustrated. Philadelphia: W. B. Saunders: 1893.

THIS is another of these American manuals which, at present, are as plentiful as blackberries in autumn. The contents are simply those of a cram-book, and are here and there good, and at times indifferent. It is said to be "illustrated"—save the mark! There are some woodcuts, but they can give little if any idea to a student of what he ought to see or look for. We are sorry we cannot recommend the book to any one, or it is doubtful if they could learn much from it. Still one or two of the tables setting forth the points of differential diagnosis in some of the maladies are worth studying.

Notes on the Clinical Examination of the Blood and the Excreta. By SIDNEY COUPLAND, M.D., F.R.C.P., Physician to the Middlesex Hospital, etc. Third Edition. London: H. K. Lewis: 1892.

THIS little book has already reached a third edition. It is a very useful little work, but would be of greater value if it were more complete. It is not sufficient to give the different tests; the fallacies should be stated quite as fully. Where, for instance, are the very important fallacies in the method of detecting sugar in the urine by means of Fehling's solution? Or why is the fact not mentioned that in the quantitative method of applying this test, the behaviour of the reduced copper is quite as important in determining the end of the reaction as the disappearance of the blue colour? or that if the urine be added very slowly and cautiously, some of the reduced copper may become oxidized again during the long-continued boiling, and cause an error? Though seemingly a simple operation, the estimation of sugar by Fehling's solution has many elements of uncertainty about it. Lieben's test for acetone should be qualified with the statement that ethylic alcohol also produces, under the same treatment, crystals of iodoform. A note should be added to the description of Esbach's albuminometer, that the results are never accurate if more than 4 per cent. of albumen is indicated, and the urine in such cases should be diluted. What about blood pigments and the spectroscope?

Diseases of the Kidneys and Bladder: A Text-book for Students of Medicine. By W. F. M'NUTT, M.D., M.R.C.S. Ed., L.R.C.P. Edin., Professor of the Principles and Practice of Medicine, University of California, etc. Philadelphia: J. B. Lippincott Company: 1893.

WHY this book should ever have seen the light is a mystery; there is nothing startling or even new in it. It is nicely printed and got up; it contains a short account of our present knowledge of diseases of the urinary tract, which, as far as it goes, is correct enough—that is all. It also contains some peculiar statements, of which the following is one example:—"Medicines are of use in keeping the bowels soluble." The author appears to be very sceptical about the occurrence of uræmia, and pours cold water on the different theories which have been promulgated to account for this condition. His scepticism is displayed more by the mode of explanation adopted than by the actual words used.

Symptoms and Physical Signs: A Formulary for Clinical Note-taking, with Examples. By WILLIAM EWART, M.D. Cantab., F.R.C.P., Physician to St George's Hospital, etc. London: Baillière, Tindall, & Cox: 1892.

THIS is a somewhat magnified example of the case-taking cards used in most hospitals for the instruction of students. Although careful and accurate case-taking is of great value in the teaching of practical medicine, yet a desire for and a prying into inconsequent trivialities often obscures, especially in the mind of a beginner, the main and more important lines of the case. We should say that both the student and the patient would be heartily sick of each other before all the questions down in this book had been put and answered. We do not say anything against its being a good guide, but it is wearisome.

Dissections Illustrated: A Graphic Handbook for Students of Human Anatomy. By C. GORDON BRODIE, F.R.C.S. In Four Parts. Part I. The Upper Limb, with 17 Coloured Plates, two-thirds natural size. London and New York: Whittaker & Co.

THIS work meets a distinct want. It contains a series of coloured lithographic plates very similar to those of Ellis, but on a smaller scale, so as to bring the price within the reach of the average student. The plates bear evidence of careful work, and reflect great credit on the artist. The seventeen plates in this part illustrate pretty thoroughly the structures exposed in a dissection of the upper limb. In Plate XI. we notice that the letter z, said to be on the anterior ligament of the wrist, is really on the anterior carpal ligament. These ligaments are not indicated, but are shaded like the darker parts of the skin. Plate IX. is not a very successful representation of the palmar fascia.

The text might with advantage have been fuller, and the woodcuts are poor. As a whole, however, the work reflects great credit on the author. We trust that the remaining parts will maintain the same high artistic standard as this one, and that the author will not follow too closely Ellis's plates, on which his are obviously modelled, but will include views of the thoracic and abdominal viscera.

Notes on the Newer Remedies, their Therapeutic Applications and Modes of Administration. By DAVID CERNA, M.D., Ph.D., Demonstrator of Physiology, University of Texas, Galveston, etc. Philadelphia: W. B. Saunders: 1893.

THESE *Notes* will be found very useful to practitioners who take an interest in the many *newer remedies* of the present day.

Materia Medica. Part III. "Catechism Series."

We have on various occasions expressed our views regarding the "Catechism Series," a series that can only mislead the student, and *Materia Medica*, Part III., is no exception.

Hospital Ward to Consulting Room, with Notes by the Way: A Medical Autobiography. By a Graduate of the London University. London: H. K. Lewis: 1893.

"Ignavis precibus fortuna repugnat"—so runs the motto on the title-page of this unpretending little work. And certainly the author was not an idle man. Gifted with dogged perseverance, and the grand power with which the typical Scotchman and certain dour Tykes are dowered of cultivating the Muses on a little oatmeal, he fought his way from a country village with scanty education through an apothecary's apprenticeship, a chemist's shop, a provincial medical school and hospital, to the M.R.C.S. Eng. and M.D. Lond.; at different periods of his life a hospital dispenser, a general practitioner, a consulting physician, a general practitioner again, and afterwards a hospital physician, the author seems to have been a bit of a rolling stone, and possibly may not have gathered much moss. Born in the "earlier years of this century," he must now be a very old man, and his life probably has been happy because it has been busy, self-reliant and honourable. Some of his remarks on change of treatment are interesting and suggestive, but the book is sadly destitute of literary achievement or even of a sense of humour.

Perseus with the Hesperides. By Bryan Charles Waller. London: George Bell & Son: 1893.

"To the memory of three poets of my own kith and kin—Edmund Waller, Bryan Waller Proctor, and Adelaide Anne Proctor—I dedicate this book." To be able to write a dedication of this sort not only puts a man on his mettle, but challenges criticism. Dr Waller need not fear that his kith and kin will disown him or be ashamed of his work. He has written a scholarly, pleasant tale in blank verse of gods and heroes, fair women and brave men, of strange and unknown seas, and lands where the flowers are

> "Some, like bees and birds and butterflies,
> Heavy with languorous odours such as woo
> The drowsy sense to unaccustomed dreams
> Of sleep on slumberous afternoons;
> In magic bowers, to low voluptuous strains
> Of trembling lutes, warm winds, and rustling leaves,
> And murmurous songs of girls and nightingales,
> Soft hum of insects, plash of bubbling streams,
> Warmth, colour, sweetness, music, and delight,
> And over all the hovering wings of Love."

Those of us who remember his eager, cultured face, his fine old-world courtesy, his eighteenth century manner, will feel no surprise in recognising our old friend the Lecturer on Pathology and Thesis Gold Medallist in the poet and word-painter. Steeped to the lips in classic lore, with a fine knowledge of English poetry,—and, we should judge, an admirer of William Morris and Swinburne,—it has been easy for Dr Waller to translate into admirable strong Saxon verse one of the finest of the old legends.

To our mind the hero is less interesting than the brave, patient figure of the latest Titan who welcomed the stony death by the Gorgon's head as relief from the eternal torturing of the tyrant god. The three Hesperides tend to be characterless, though Ægle is made lovable as well as wise. To the few who still find rest from the weary sameness of professional toil by reading of clear skies and other days, and of "the light that never was on sea or land," this little book will give lasting pleasure.

County of Fife: Second Annual Report on the Health and Sanitary Condition of County and Districts. By THOMAS GOODALL NASMYTH, M.D., D.Sc., D.P.H., F.R.S.E., Medical Officer of Health.

DR NASMYTH is again early in the field with his Annual Report on the health of the county and districts of Fife during the year 1892.

We must congratulate him on the excellence of the report, and the large amount of information it contains, furnishing, as it does, a complete record of the work accomplished by himself and the sanitary inspectors in the county and four large districts of Dunfermline, Kirkcaldy, St Andrews, and Cupar.

Most people have a very vague idea as to the duties of county medical officers, and before the appointments were made three years ago, it was a commonly expressed opinion among county councillors in different parts of the country, that there was little need for such officials, and the great difficulty would be to find employment for them; indeed, it was actually proposed to divide Scotland into two or three districts, and have one medical officer for each, so as to ensure that he should not have too little to do. Such ideas are no doubt by this time exploded, and it is fully recognised that every county affords ample scope for the abilities of an active officer of health, and that much good work has already resulted from the change in the administration of health matters.

A perusal of Dr Nasmyth's report will satisfy any one who is sceptical on this point. In the general part he deals with several extremely important questions affecting small urban and rural populations, and we quite agree with what he has to say on the cleansing and scavenging of villages. It is to be hoped that in the proposed new Public Health Act powers will be obtained for dealing effectually with the scavenging and removal of refuse of villages.

Dr Nasmyth draws attention to the inconvenience and injustice often caused through the want of control in rural districts over the erection of new buildings, and he strongly advises the district committees to adopt the "rules for new buildings" from the Burgh Police and Health Act, 1893. This we can thoroughly endorse. Every building in any urban or rural district should be certified as fit for occupation by the Local Authority before it is inhabited.

Drainage and water-supply engrossed a large share of the attention of the district committees during the year, and much useful information has been collected in regard to the existing water-supplies of a large number of villages,—the first step towards securing for them better sanitary conditions. Many other matters are dealt with in the report, such as the housing of the poor, rivers pollution, hospital accommodation, infectious diseases, and vital statistics, and the whole will well repay perusal.

The Bristol Medico-Chirurgical Journal. Vol. XI., No. 39. Bristol: Arrowsmith.

THIS enterprising and spirited quarterly journal has increased its size and amount of reading matter. This number contains some excellent original articles by Mr J. Kent Spender and Dr Alfred Sheen. The progress of the medical sciences is marked by well-selected quotations, and its reviews are brightly written and appreciative. The scraps picked up by the assistant editor, Mr Griffith, are often most amusing, and occasionally are filled with a fine classical aroma, reminding one of the days when a doctor really was supposed to be a person of some general education, and to know at least something of classical literature.

Annals of Surgery: A Monthly Review of Surgical Science and Practice. Edited by WILLIAM MACEWAN, L. S. PILCHER, FREDERICK TREVES, and J. WILLIAM WHITE. New and Enlarged Series. 1893.

APART from being one of the best known journals devoted to surgery published in English, the *Annals of Surgery* has, by its intrinsic merits, gained, year by year, a larger circulation both in this country and America. It goes without saying that readers of the *Annals* will appreciate the many alterations which have been effected in the new and enlarged series, of which the first number appeared in January of this year; exception will, however, be taken to the abolition of the table of contents, which occupied so prominent a position on the outside cover of the former series. We protest very strongly against this innovation, and trust that this most essential requirement in a scientific journal be provided in future numbers.

The Journal of Anatomy and Physiology, Normal and Pathological. Vol. XXVII., Part 2. London: Charles Griffin & Co.: 1893.

ONE of the most interesting articles in this part of the Journal is by Prof. D. J. Cunningham on "Delimitation of the Regions of the Abdomen." Last year a paper was read before the Anatomical Society by Prof. William Anderson, in which attention was called to the want of agreement amongst anatomists as to where the lines should be drawn on the anterior aspect of the abdomen in order to divide it into the well-known nine classical regions. As the outcome of a discussion on the subject, a committee was appointed, consisting of Messrs Anderson, Cunningham, Macalister, Makins, Symington, and Shane, to draw up a report with a view to secure uniformity on this subject. This paper gives the substance of a report submitted to the committee by Prof. Cunningham. He recommends that the upper horizontal line should be drawn at the lowest part of the tenth costal cartilages, which is the lowest part of the chest wall as seen from the front. The lower horizontal line is one of more difficulty. So far as the skeleton is concerned, the best point would be the highest part of the iliac crest, but unfortunately this is at the level of the umbilicus, or may even be above it. The umbilical region, therefore, may not contain the umbilicus, or will have the umbilicus close to its lower boundary. On the other hand, a line uniting the anterior superior iliac spines puts almost the whole of the iliac fossa above the iliac region. In place of either of these lines Cunningham suggests one uniting the prominent tubercles on the iliac crests about 2 inches behind the anterior superior iliac spines. This line is distinctly below the umbilicus, and puts almost the whole of the iliac fossa in the iliac region. The vertical lines are drawn, one on either side, through the middle of Poupart's ligament.

Cunningham froze a body and divided the abdomen in horizontal and vertical planes indicated by the above-mentioned lines. By this means he could readily determine the viscera found in each region. Of course the results obtained by the examination of one body require to be checked and supplemented by a repetition of this method on other subjects; still, the results obtained are of considerable interest.

The stomach was empty and contracted; its pyloric orifice was in the mesial plane, and under cover of the liver. This agrees exactly with a case described and figured in the *Edinburgh Medical Journal* for February 1888 by Dr Symington. Cunningham's results also closely agree with those of Symington as to the position and relations of the liver and kidneys. The right kidney was situated in the hypochondriac and epigastric regions, only a very small piece of its lower end entering the lumbar region. The left kidney did not reach into the lumbar region.

In "Notes on the Acromion" Prof. Macalister gives an elaborate description of this process. The paper is illustrated by two excellent plates, one showing the variations in the shape of the acromion, and the other the differences in its mode of ossification.

The principal physiological paper is that by Dr A. Lockhart Gillespie, "On the Gastric Digestion of Proteids."

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXXII.—MEETING V.

Wednesday, 15th February 1893.—Mr Joseph Bell, *President, in the Chair.*

Discussion on Myxœdema.

1. *Dr Byrom Bramwell* read a paper on the CLINICAL FEATURES OF MYXŒDEMA, which appears at page 985 of this Journal.

2. *Prof. Greenfield* read his paper on the PATHOLOGY AND MORBID ANATOMY OF MYXŒDEMA, which was illustrated by microscopic and lime-light demonstrations. His pathological connexion with the subject, he said, had been of long standing. It had been his good fortune, when pathologist at St Thomas's Hospital, to make the post-mortem on the case of Dr Ord's, which was the ground for his first report on the condition, and on which he founded the name *Myxœdema.* The primary most essential fact in the pathology of the disease was the atrophic change in the thyroid gland. There was little accurate knowledge as to the cause of this change. The functions of the thyroid gland were obscure, even with the light that modern investigation had thrown upon them. It was only certainly known that in some way this highly-vascular, ductless gland was concerned in the metabolic changes of the nutritive fluids, and that it had some relation to the elaboration of mucin. It probably secreted a material of the nature of a ferment, which rapidly passed into the blood and stimulated the secretion of the skin glands, and in some way acted upon the heart. In myxœdema the thyroid gland was atrophied, and in sporadic cretinism it might be almost entirely absent. In exophthalmic goitre there was an exactly opposite condition,—an enormous increase in the secreting structure of the thyroid, and also of the colloid material in the spaces of the gland. In ordinary cystic goitre, however, associated

with cretinism, there was an enormous increase in its substance. Therefore we should not regard the morbid appearances of the thyroid in myxœdema as of too great importance, or put out of our minds other considerations in relation to its function. A very important control research would be to ascertain if feeding with thyroids produced any conditions in the system analogous to those in exophthalmic goitre. In myxœdema the sweat glands and sebaceous glands acted defectively, and later atrophied together with other parts of the skin. The normal transpiration being deficient, the lymph seemed to tend to accumulate and stagnate. That this was partly at least correct, seemed to be proved by the remarkable improvement often seen from the action of hot-air baths. There was one point which did not seem to have been observed, and that was the altered reaction of patients with myxœdema to tuberculosis. They seemed to show a marked proclivity to tuberculosis, while in its course and manifestations the tubercular process was largely modified. All the five cases of myxœdema from which he showed specimens died from phthisis, as well as a case of sporadic cretinism he had had. The tubercular processes were characterized by exceedingly rapid progress when they once set in. The power of repair in myxœdema was good, to judge from his experience of a case in which it was necessary to do a surgical operation. He had studied microscopically material from seven cases of myxœdema and one of sporadic cretinism. In all the cases the thyroid was diminished in size. There was either generally or in parts an advanced condition of atrophy with fibrous overgrowth. In some all gland tissue had disappeared. In some the fibrous tissue was highly cellular. In one there was a lymphoid infiltration. These changes corresponded with what occurred in all glandular atrophies. The changes in the epithelium were also parallel to those seen in all wasting glands. Changes were found in the arteries similar to those found in all chronic interstitial inflammations. In the skin there were marked changes in all the glandular elements and in the hair follicles. They showed various stages of atrophy. Often there was an extensive deposit of pigment in the skin. The epidermis became very thin. The œdema appeared to him to owe its characters to the fact that it was more deeply situated than in ordinary anasarca. In the case of other parts, such as the lips and tongue, the œdematous condition was also quite deeply situated. In the tongue, patches were often most marked at a distance of a third of an inch or more from the surface. The change might be called a myxomatous degeneration of the tissue. In the skin, tongue, and other organs there were sometimes areas of dense fibrous overgrowth. The other organs in his cases, with the exception of the lungs, which were affected with tuberculosis, were in a practically normal condition. In the kidneys, however, there was occasionally a peculiar swelling and pallor, due to the presence of a myxomatous degeneration around the arteries at their division, and an extension of a myxomatous and cellular infiltration between the tubules in that position, while the cortex was normal. He had found no change in the nervous system, except in the peripheral nerves, in which there were frequently indications of a chronic neuritis. How far this change was due to the disease he was unable to say. The lymphatic glands and suprarenal capsules were normal. He concluded by showing a number of lime-light views illustrating the morbid changes in myxœdema. Among these he showed a section of the thyroid gland of an old man, who died of cirrhosis of the liver, which showed changes exactly resembling those found in myxœdema.

3. *Dr Lundie* read his paper on the TREATMENT of the disease, which appears at page 996 of this Journal.

Dr Affleck moved that the discussion be adjourned.

The Adjourned Meeting was held on Thursday, 16th February, at 4.30 P.M.,—Mr Joseph Bell, President, in the chair.

Dr Affleck resumed the discussion on Myxœdema, and said that so many cases of myxœdema had of late appeared in the medical papers that it was quite evident that for a long time the disease must have been overlooked. Cases had been passed by as Bright's disease without albuminuria, or perhaps there was a trace of albumin suggestive of that condition. He showed two photographs of a patient with myxœdema whom he had seen several years ago, the one showing her as she appeared when first seen by him, and the other taken after she had undergone a course of the treatment then in vogue—namely, hot baths, friction, arsenic, and good feeding. The patient had certainly greatly improved. The temperature of this patient had never risen to the normal line the whole time she was under observation except once, when she took a severe feverish cold, which would have probably raised the temperature of an ordinary person to 104°. He had had several cases since, in all of which the temperature was habitually subnormal, and with little or no fluctuation. He thought we were as yet only collecting information about the whole subject, and on that account it was important that all who had cases should communicate them, in order that they might get as much knowledge as possible to bear on the subject. They should inquire into the antecedents of the patients, with a view to finding out the etiology of the disease. In most of his cases he had obtained a history of antecedent depressing influences, such as worry, anxiety, and hardship. There might, after all, he thought, be some nervous condition underlying the disease, which interfered with the innervation of the thyroid gland and caused it to atrophy. It had been remarked that patients with myxœdema frequently became insane. He had had a case in which the converse occurred—in which an insane patient became myxœdematous. The patient was a woman of 48, who took cerebral hæmorrhage with left hemiplegia, and afterwards became melancholic and suicidal. Three years afterwards, when patient had somewhat improved, she became myxœdematous. Some very striking contrasts had been brought out by Dr Bramwell and Professor Greenfield between myxœdema and exophthalmic goitre. He thought that in Addison's disease they had another condition which presented an interesting analogy to myxœdema. He suggested that the effect of treating cases of Addison's disease with suprarenal capsules should be tried. There were also other diseases in which they might try analogous treatment. There was overwhelming testimony of the value of the treatment of myxœdema by thyroid feeding, and he welcomed it as a most important contribution to modern therapeutics. He then showed a boy who had been admitted to his ward a year ago with sporadic cretinism. Another member of the family suffered from the same disease. The patient had six toes on one foot, and two other members of the family had a similar deformity. He had treated the case by thyroid implantation, and not by thyroid feeding. Mr Caird had engrafted thyroid material into the mammary regions and tunica vaginalis. The patient had immensely improved, and the result, he thought, was a very remarkable one.

Dr John Thomson showed two cases of sporadic cretinism, both of which were under treatment with thyroid gland. They were both patients of Dr W. H. Miller. The first was a girl of five years. Patient seemed to be quite healthy until between two and three years old, when it was noticed that she was not growing as she should do, and was not so bright as she might be. When examined, seven and a half weeks ago, she was 32 inches in height. Temperature was subnormal. Skin was rough and scaly; hair coarse and scanty. She had a characteristic squat figure, and her hands also were characteristic. There was a tendency to coldness of the extremities, and there was puffiness of the eyelids. There were distinct supraclavicular swellings. Fontanelle was still open. The mental characteristics were those of all cretins. On the 24th of December last he began to give her thyroid gland by the mouth. She at first had one-eighth, and afterwards one-fourth of a gland (half of a lobe) twice a week. After three and a half weeks it was seen that she was very much better, and she had since gone on steadily improving. The face was less puffy and of a better colour, the skin softer and more moist. Temperature was now normal. The swellings in the neck had gone. Bowels were regular. She was much more intelligent. Her hair had grown very much, and the scalp, which had had a tendency to seborrhœa and eczema, had become almost quite healthy. She had grown almost an inch in the time she had been under treatment. The second patient was a lad of eighteen years and eight months. An account of his case appears at page 1022 of this Journal.

Dr Byrom Bramwell showed a woman who was admitted into his ward in the Infirmary at the end of October last, suffering from myxœdema of five years' duration in a typical form. On the 8th of November he commenced to give her half of a sheep's thyroid every day. In a few days the temperature went up to 100°, the pulse rose from about 45 to 80, and the patient became extremely prostrate. The tongue became foul and the breath offensive, and she had vomiting and diarrhœa. Pain occurred in various parts of her body, but it was felt most in the position of the thyroid. The treatment had to be suspended for a time. The marked derangement and depression produced in this case was, he said, a lesson to him to give very much smaller doses in the subsequent cases he had to treat. He was satisfied that large doses, especially in old people with atheromatous arteries, were not unattended with risk; for anything like the amount of depression which was produced in the case which had just been brought forward might very easily prove fatal in old or debilitated persons. In such cases probably one-sixteenth of a gland daily was sufficient. Treatment was resumed after ten days with one-quarter of a gland every three or four days. She was now practically cured. The whole skin had peeled in a very extraordinary way. She now perspired naturally, her temperature was normal, and her pulse was faster. She was bright and active mentally, and felt perfectly well. The scalp was smooth and normal, but the skin of the face was still markedly pigmented. She had done nothing for the last five years, but now felt so well that she was going to take a situation in a few days. He next showed a young woman who had been suffering from severe general psoriasis since May last. The remarkable peeling of the skin, indicating a profound alteration in its nutrition, seen in the former case, had suggested to him that thyroid feeding might be advantageous in psoriasis, and perhaps also in ichthyosis and some forms of eczema. He had therefore resolved to try the effect of the treatment upon this case. It had been commenced ten days ago, half a lobe being given every day. It had not produced much reaction, but it had had a most extraordinary effect upon the disease. The inflammatory condition had completely subsided, and the patches of psoriasis had begun to peel off in large scales, leaving a sound and healthy skin beneath. He also showed a woman, 33 years of age, who was admitted to the Infirmary on the 26th of December last, and who had been suffering from myxœdema in a typical form for three years, the disease commencing after the birth of her last child. The pink blush usually seen on the cheeks was absent. She had been treated first with one-eighth of a thyroid (one quarter of a lobe) daily, and afterwards with one quarter, and later with one-half of a thyroid daily, as the treatment was well borne. Latterly she had complained of marked pain in various parts of the body, palpitation, and a feeling of great debility and anorexia. She had no severe gastro-intestinal disturbance. The dose was reduced, and the unpleasant symptoms disappeared. The case was now in a fair way to cure. She was resuming her normal condition. According to her friends, she now looked ten or fifteen years younger. An eczema which she had had on the back of her hand had disappeared. He also showed the case of sporadic cretinism which he had described on the previous day. In answer to a question, he said that he gave the gland chopped uncooked in rice paper. It would, he thought, probably be better to give a fixed dose in the form of a definite extract.

Dr William Russell showed a woman, aged 60, who showed all the symptoms of myxœdema in a very marked degree. No distinct history of the case was obtainable, but it was probable that the patient had suffered from the disease for twenty years. She weighed over 22 stones. Treatment had not yet been commenced.

Dr John Thomson also showed, for *Prof. Grainger Stewart*, a well-marked case of myxœdema in a woman 38 years of age, who had been ill for eighteen years. She had just come to the Infirmary for thyroid treatment.

Dr Alexander Bruce showed a case of myxœdema under the care of Prof. Fraser in the Royal Infirmary, which was being treated by thyroid feeding. Thirty grains, by weight, of the thyroid were given during the first month twice a week. Patient showed distinct improvement within a week of the commencement of the treatment. Pulse and respirations had increased in rate. The temperature had risen to normal. Her weight, which was 12 stones 10 lbs. when treatment was commenced, was now 10 stones 12 lbs. Her memory and speech had improved very much. Within three weeks of the commencement of the treatment she was able to knit. The only discomfort after the feedings had been headache or occasional pains in the limbs. One untoward feature that had developed, however, was a condition of relative anæmia. Patient had no murmurs when admitted, but now had basal and mitral systolic bruits. Blood-corpuscles had fallen from 4,600,000 to 3,700,000, and hæmoglobin from 78 per cent. to 59 per cent. An increase in the amount of urine and urea was noted. Otherwise her progress had been satisfactory. Dr Chalmers of St Ninians, who had recommended this case to Prof. Fraser, had another case under treatment in the country, and he had found that if thyroids were not given quite fresh they were apparently inert, and did no good.

Dr Russell showed numerous specimens of sheep's thyroids.

Dr Melville Dunlop gave an account of some cases of myxœdema (detailed at greater length at p. 1005 of this Journal) which he had lately treated. The first was a single lady of 46, who had suffered from the disease for twelve years. Within the last five years her twin sister had developed myxœdema. Another sister, who was now dead, was also myxœdematous, and there was strong evidence to show that their mother suffered from myxœdema for many years before her death. Somewhat recently acute mania, with hallucinations of hearing, had developed. On the 18th of October thyroid feeding was commenced. She was given 20 drops of Brady and Martin's thyroid extract thrice a week. By the 30th of October the hallucinations and excitement had gone. She had rapidly and steadily improved, and now said she felt like her old self. She had lost 4 stones since treatment was commenced. The second case was the twin sister of the previous patient. She was given 20 drops of the extract twice a week. She rapidly improved. After six weeks or so of treatment, her heart became weak and irregular; but this condition soon disappeared under cardiac tonics. She had shown no other bad symptom, and was now quite well. Health was being maintained by a fortnightly dose of 15 drops. The third case was a woman of 53. She had had a large goitre, which had disappeared. Atrophy of the thyroid gland evidently supervened, and she developed myxœdema three years ago. She became morbid and suspicious, and had delusions. Under treatment all her symptoms disappeared, and she was now quite well. The fourth case was that of a woman aged 56. She had so much œdema of the eyelids that she could not see without holding them apart. She, too, was rapidly improving under treatment.

Dr Church referred to two cases of myxœdema which he had seen. One was in an old gentleman, who died at the age of 60 some years ago. The disease commenced when he was 47. The symptoms of myxœdema were preceded by great depression and suicidal tendencies. Eight years before his death, after taking a Turkish bath, he could not pass his water, and had afterwards to use a catheter daily. His urine became putrid and continued so, and contained a large quantity of mucus. The bladder and prostate were both atrophied. He eventually died with uræmic symptoms and acute bronchitis. The other case was that of a lady 60 years of age. The disease came on six months ago after a fright. He saw her for the first time four months ago. He put her upon thyroid gland, and she had improved very much. As a result of an overdose on one occasion, she suffered from severe prostration; but after forty-eight hours it passed off again. Another unpleasant symptom from which patient had suffered, after this too large dose of thyroid, was swelling of the parotid and submaxillary glands. Her family history was distinctly phthisical. Seven years ago her son developed exophthalmic goitre. Her sister was similarly affected with myxœdema. Dr Church showed two specimens of dried thyroid, prepared by Duncan, Flockhart, & Co.

Dr George Murray, Newcastle, said there were two common symptoms which had not been referred to. One was the frequent presence of troublesome piles, and the other the occurrence of a thick mucous discharge from the mouth at night. Both of these symptoms disappeared under treatment by thyroid feeding. He explained how he had been led to employ thyroid extract in the treatment of myxœdema. The observations of Kocher upon the effects of thyroidectomy in man, supplemented by the experiments of Victor Horsley upon monkeys, and the discovery by Prof. Schiff that by transplanting thyroid gland into animals the symptoms following thyroidectomy could be prevented, lately put the pathology of myxœdema upon a satisfactory basis. Then Victor Horsley suggested transplantation of thyroid in myxœdema. The improvement that followed this experiment, the result of which was published in August 1890, was immediate; and therefore, he thought, could not be due to the transplanted gland becoming functionally active, as sufficient time had not elapsed for it to become vascularized. This seemed to him strong evidence that the thyroid was a secretory gland. He left the question open as to whether the gland destroyed something harmful to the body or secreted something necessary to keep it in health. He resolved to try the effect of introducing a glycerine extract of the gland into the body in a case of myxœdema. As he thought it probable that the active substance would be destroyed in the stomach, he employed first the hypodermic method. The material he employed consisted of equal parts of thyroid extract, glycerine, and a half per cent. solution of carbolic acid. For administration by the mouth he used the same preparation, without the addition of carbolic acid. One and a half drachm of each preparation was equal to the complete thyroid gland of the sheep. Several other ways of giving the gland had been devised, the latest of which was as a precipitate obtained by treating the glycerine extract with alcohol. In this form it had been given in pills by a doctor in Copenhagen, with marked success. If the hypodermic method was used, he recommended 10 to 15 minims twice a week. If the glycerine extract was given by the mouth, he advised that 10 minims should be administered once or twice a day. It was important to bring on the improvement slowly. He thought it best to take two or three months over the first stage. Over-doses caused rapid pulse, and sometimes palpitation, headache, and vomiting. Undue acceleration of the pulse was to be avoided. It was very important to throw no extra strain upon the heart, especially in old patients, who usually had degenerated arteries and heart. The patients should be kept very quiet during the first stage. He had lost two cases through not knowing the importance of this. Both had cardiac symptoms before the treatment was started, and died suddenly from syncope through over-exerting themselves when beginning to feel better. Dr Woodhead had observed that several animal extracts caused degeneration of the heart, but he believed that this did not apply to thyroid gland extract. The shortest time in which he had been able to carry out the first stage had been six weeks. The second stage lasted throughout the whole of the patient's life. To maintain health after the first stage had been passed, he recommended 5 to 10 minim doses of the glycerine extract to be given daily by the mouth, or 15 minims once a week hypodermically. He had heard of about 100 cases that had been treated by this method, and, as far as he knew, only three had failed. Two of them, it was probable, had not been correctly treated, as had been pointed out by Dr Lundie. The third was a case recorded in France, which was complicated by exophthalmic goitre. This case was one of special interest, and offered a difficulty to Prof. Greenfield's theory. It was never too late to adopt the treatment. A case of twenty years' standing had been treated very successfully. If treatment was left off for a few weeks, the symptoms returned. On resuming treatment they again disappeared.

Dr Davis, London, said he had had eight cases of myxœdema under his care, seven of which had been treated with thyroid extract. He had latterly used a powdered extract, with very good results. It had been shown that though the gland was given thoroughly cooked it acted equally well.

Dr Stalker, Dundee, said there was a larger proportion of cases of myxœdema in the town from which he came than in any other place he had heard of. He knew of at least twenty-one cases. He had treated three cases by the new method with success. He had found that the parboiled gland acted perfectly well. In reply to a question by the President, he said he did not know if sporadic cretinism was specially prevalent in Dundee.

Dr Foulis said that one of his cases died within twenty-four hours after taking a quarter of a lobe. Profuse diarrhœa set in, and patient became rapidly comatose and died. Another case, which he described, had done very well.

Dr John Thomson gave an account of the post-mortem appearances in a case of myxœdema which died after a few weeks of treatment by thyroid feeding. A report of this case appears at page 1014 of this Journal.

The openers of the discussion having been invited by the President to reply,

Dr Byrom Bramwell said he had nothing to say except to express his admiration and gratitude to Dr Murray for this admirable piece of work. They must all recognise the fact that the injection of thyroid extract and thyroid feeding which constituted such a great advance in therapeutics were largely due to Dr Murray's initiative.

Prof. Greenfield said he did not like to hear cases spoken of as "cured." He thought it would be of great importance if, in the future, continuous records of the cases were kept for some years, and in the event of any of them dying, if careful post-mortem examinations were made. He advised that, notwithstanding these remarkable results, they should not neglect other remedies as well. Enormous benefit could be gained by the use of hot baths, and by change to a drier and warmer climate. He contended that there was evidence to show that these myxœdematous patients and cretins had far more intelligence than they gave them credit for. How could they explain the total restitution of the mental faculties in a few weeks? The fact was that the patients gave up the attempt to follow conversation and to express their feelings because of their consciousness of the physical difficulties which attended the effort.

Dr Lundie said, with regard to the use of the word "cured," there was no other word in the language that was adequate to express what took place in some of these cases. It was used, as pointed out in his paper, subject to the qualification that the patient had to go on with the treatment throughout life. He thought it was best to employ small and frequent doses, and was glad to hear that Dr Murray had come to the same conclusion. They were all certainly immensely indebted to Dr Murray for the advance that he had made in the treatment of this disease. They did not know yet what possibilities might be realized as a result of his work. It seemed to open up an immense vista, for there were many other diseases that might be found amenable to similar methods of treatment.

The President said he would like also from the Chair to thank Dr Murray for having come there.

Dr Connell, Peebles, moved a vote of thanks to the introducers of the discussion.

Dr Clouston has furnished the following note regarding the mental symptoms in myxœdema, which he was unfortunately prevented from speaking to the Society:—In eight cases of myxœdema it had been attended by mental symptoms of so severe a character that the patients had to be sent to his care in the Asylum, certified as insane. He had never seen any case of the disease where the mental power was not affected more or less. It was, of course, the exception for the mental symptoms to be so marked as to amount to technical insanity, but he thought that it might be assumed as one of the definite symptoms of the disease that all the functions of the whole brain cortex were altered in some degree. The slowness of voluntary movement, and the great delay in the mental reaction time, were the first mental symptoms. Then came a mental lethargy and hebetude. Along with this there was apt to be an irritability on slight causes, which meant that the mental inhibition was becoming impaired. All through the disease the diminution of control was a very marked symptom. This often led to acts of irrational violence. Then came a general enfeeblement of mental action—a mild dementia. Early in the disease a morbid suspiciousness, that often crystallized into delusions of suspicion, appeared. The intensity and the responsiveness of the affective faculty were found to be lessened. All the mental faculties become in time affected—volition, emotion, power of reasoning, and memory. Yet in no case had he seen complete dementia or acute delirious mania. He had seen suicidal melancholia with attempt at poisoning and refusal of food more than once. In one case the loss of control was shown by dipsomania. The patients were easily affected by domestic annoyance or worry. Most of his asylum patients had sufficiently recovered in mind to leave the asylum and return home after a time, but none of them could be considered satisfactory mental recoveries. It would be one of the most interesting points connected with the thyroid juice treatment to see if that highest and most delicate of all organized structures in nature, the brain cortex, could, after having been in a condition of disturbed nutrition for twenty years, completely recover its sound working. He had two cases now under treatment, one of them of fifteen years' duration, where the mental symptoms were markedly abating. If such a complete cure resulted, it would be one of the most remarkable therapeutic results in the history of medicine. He had found a neurotic heredity to be common, but by no means universal, in the disease. There could be no doubt, however, that myxœdematous insanity—now, he hoped, to disappear for ever, for all the cases would be treated and cured before they reached that stage—might arise without any neurotic heredity, simply from impaired myxœdematous nutrition of the brain cortex. As to the nature of the disease, he was still of the opinion that the nutritional changes could only be explained through the action of the blood deficiency on the trophic centres, and in that sense it might be called, as he long ago called it, a "trophic neurosis," and they would no doubt have to look to the nervous centres for an explanation of the changes in the thyroid.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION LIV.—MEETING V.

Wednesday, 8th March 1893.—Prof. A. R. SIMPSON, *President, in the Chair.*

I. *Dr Milne Murray* showed (for Dr Croom) a Drawing and Photographs of a patient with large ELEPHANTIASIS OF THE VULVA. Patient was aged 32, and has had three children, youngest six years old; no abortions; regular menstruation. At age of 13 was in Glasgow Royal Infirmary for suppurating tubercular glands of neck. Five years ago the swelling of the vulva was first noticed. Sometime thereafter she suffered from suppurating glands in both groins. At times great pain in the tumour, and it appeared at intervals to take on erysipelatous inflammation. (This case is reported at full length at page 1027 of this Journal.)

II. *The President* exhibited two UTERI which had been extirpated by the vaginal method because they were carcinomatous. The one patient had the following history:—Mrs F., aged 43, vi-para, admitted to Ward XXIV. January 12, 1893, complained of irregular discharges of blood, and pain in the small of back. Six months before, patient first noticed, when walking, a discharge of blood from the vagina, which lasted for 1½ hours. Since then, every few days similar discharges have occurred, the quantity being less in amount. She gradually became weaker, paler, and thinner. Two months ago, on a market day, after she had worked hard and walked several miles, an excessive discharge of blood came away, followed by a slight discharge, which lasted for several days. Then she again lost a large quantity. She then took to bed. Slight discharges have occurred ever since. On admission the patient was found to be suffering from a fungating carcinoma of the vaginal portion of the cervix. The other patient was also a married woman, of whose history the clinical clerk had made the following notes:—Mrs B., aged 48, xi-para, admitted February 20, 1893, complaining of an offensive coffee-coloured discharge from the vagina. A year before, it was first noticed, appearing at irregular intervals, and being slight in amount. The odour was very bad. There was no pain. Menstruation ceased six months ago. Eighteen months ago it stopped for three or four months. She never suffered from menorrhagia or dysmenorrhœa. On examination the patient was found to be suffering from cancer of the posterior cervical wall, which had evidently started in the substance of the wall. In this case[1] only six days had elapsed since the operation, but the condition of the patient was in all respects satisfactory.

III. *Dr J. W. Ballantyne* showed—(*a.*) A STEAM-STERILIZER FOR INFANT FEEDING. It was known as the "Arnold," and had, in his opinion, certain advantages over the Soxhlet apparatus. (The sterilizer was shown, and its mode of working demonstrated.) It was recommended that the bottles containing the milk should be plugged with cotton wool during the process of sterilization, but he (Dr Ballantyne) used by preference india-rubber stoppers and glass rods. He had recommended the instrument-maker to provide along with the Arnold instrument a sufficient number of india-rubber teats as well as the india-rubber corks and glass rods mentioned above, and with these additions he was of opinion that this form of sterilizer was the best at present in use. It had certain special advantages: for instance, it was easy to keep it supplied with water, as it could be seen at once when a fresh supply was needed; sterilization began in a very few minutes after the apparatus was put upon the fire, for the quantity of water to be heated was small; the bottles were less often cracked than when they were standing in boiling water; the milk prepared in this way had not so flat a taste as that from other sterilizers, as there was less air expelled during the process; and, finally, the whole apparatus was not so large and cumbrous as was, for example, the Soxhlet sterilizer.

(*b.*) Photographs of a HYDROCEPHALIC FŒTUS, and drawing of a frozen section of the head. He was indebted to Dr R. A. Lundie for the specimen and the following clinical notes:—The mother,

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[1] Both patients have been dismissed from the Infirmary feeling quite well.

28 years of age, was a stout, strong woman, living in comfortable circumstances. She had always been healthy. Menstrual history normal. She had married when 23 years old, and had two normal pregnancies (children 4 and 2 years old respectively) and one miscarriage at about the second month, which occurred a year ago. The pregnancy which resulted in the birth of the hydrocephalic child was the fourth. No abnormal symptoms were noted during its course. The waters were said to have come away three days before delivery, and the fœtal movements to have ceased two days before delivery. The labour was rapid. The membranes, cord, and placenta seemed normal. The father, 30 years of age, was a healthy man, thin, dark, and rather neurotic. He came of a neuro-bilious stock. The mother's mother had had a good many miscarriages, but her living children showed no special morbid tendency. The hydrocephalic infant, a female, measured 54 cms. in length, and weighed 3270 grammes. The circumference of the head was 50 cms. The occipito-mental diameter was 21 cms., the occipito-frontal 20 cms., and the suboccipito-bregmatic 18 cms. The vertical measurement of the head was 15 cms. The antero-posterior diameter of the trunk at the level of the diaphragm was 9·5 cms., and at that of the umbilicus 8·5 cms. The skin was peeling off in various parts of the body, especially round the ankles and wrists and on the buttocks and shoulders. The section of the head showed that this part of the body had been greatly compressed during delivery. There was a herniation of the brain substance through the posterior fontanelle, which was large: one parietal bone was driven in under the other, whilst the two halves of the frontal were crushed backwards and downwards into the brain substance, and the hydrocephalic fluid lay partly inside but chiefly outside the bony cranium. The spinal canal and cord were normal. There was no thumb on the right hand (which was clubbed), and no radius in the right arm. In connexion with the last-named circumstance, Dr Lundie had made him acquainted with an interesting fact: in the mother the balls of both thumbs were deficient, so that these digits could not be properly opposed; they could be flexed across the palms, but not turned so as to face the fingers. The thumbs themselves were rather ill developed, and the usual fold marking the line of flexure was absent. The condition was congenital, and her sister had one thumb similarly affected.

IV. *Dr J. C. Webster* read his paper on THE OCCURRENCE AND SIGNIFICANCE OF UTERINE ROTATION, which will appear in a future number of this Journal.

Dr J. W. Ballantyne said that as his observations on the condition of the uterus in the fœtus had been alluded to by Dr Webster, he might be allowed to add that he had recently had the opportunity of examining frozen sections of the pelvic organs in several full-time infants, and had in only one case found rotation of the uterus. In that instance, as in the one referred to by Dr Webster, the rotation could be explained; for there were traces of peritonitis, the right ovary and Fallopian tube being adherent to the intestinal coils in the neigbourhood of the cæcum. At the same time he did not think that the question whether the fœtal uterus showed or did not show rotation had much bearing upon the problem of uterine rotation in the pregnant or post-partum condition.

Dr Haig Ferguson begged to thank Dr Webster for his paper, which interested him greatly, as showing, from the difference of his conclusions from those of Dr Ferguson, that the latter's opinion that anatomical work alone could not be relied upon entirely for clinical purposes, was to some extent justified. Most of Dr Webster's objections to Dr Ferguson's paper would, he thought, be found fully answered in the paper in question, to which reference might be made, so that he would not detain the Society by answering all the points *seriatim*. Dr Webster, however, seemed to argue erroneously with regard to uterine rotation in fœtal life. No such rotation probably existed as such, but one Müller's duct (the left), usually lay somewhat in front of the other, thus giving the uterus a "set" in an oblique direction. Dr Webster was apparently in error in ascribing the rotation of the pregnant uterus to the position of the child. There could be little doubt but that the position was greatly determined by the uterine rotation. Dr Milne Murray expressed very clearly his belief that the obliquity of the uterine muscular fibres must necessarily produce rotation. Dr Ferguson was glad to hear him make this statement, which was in agreement with what Dr Ferguson had shown in his paper to be an intrinsic cause of rotation acting both actively and passively. Dr Webster explained the frequent uterine rotation in the cow to the fact that only one horn of the uterus was occupied. The same principle held good in the human uterus: the right half was usually more developed than the left, and the more greatly developed part tended to pull back its corresponding side. Dr Webster had said that the ovaries did not follow the uterus as it rotated, whereas there could be little doubt but that they did. No doubt there were other causes than mere pressure on the ovaries, which might produce pain and shock, but it was none the less true that pressure on the ovaries was a distinct and probably more frequent cause of pain. The whole matter resolved itself into this, that the uterus should be grasped antero-posteriorly as regards itself, and not as regards the pelvis, in the third stage of labour, and pressure downwards should be made in the proper pelvic axis. The directions at present taught of grasping the uterus antero-posteriorly as regards the pelvis were misleading.

The President, before calling on Dr Webster to reply, remarked that both his and Dr Ferguson's contributions would be found to be of value. Prof. Goodsir used to dwell on the law of spirality that he recognised as a guide in the direction of all kinds of organic growth. Ernst Fischer had even indicated that each individual cell had a tendency to grow spirally. Prof. Pettigrew had illustrated the spiral movements of the wings of birds and the feet of animals. Perhaps the human mind worked in the same fashion, so that science progressed by a series of spiral movements. Our advance towards a true appreciation of the exact lie of the uterus was being guided by Dr Ferguson making a spiral movement in one direction and Dr Webster making a similar movement from the other side. The practical conclusion as regards the grasp to be taken of the uterus in the third stage, would be to make practitioners careful that they seized it in an antero-posterior direction, *quâ* the walls of the uterus itself as they usually were, whatever might be the relations of the uterine to the pelvic diameters.

V. *Dr Haultain* read his paper ON BENIGN GROWTHS OF THE UTERINE MUCOSA, which will appear in a future number of this Journal.

The President was glad to have heard the interesting record of cases brought before them by Dr Haultain, and the description of the pathological varieties. They illustrated well the various forms with which they were familiar in practice. He (the President) had seen all these varieties, and with regard to the symptoms had found how elderly women with cervical polypi giving rise to hæmorrhage imagined that menstruation was still in progress. Dr Haultain had spoken as if this hæmorrhage and leucorrhœa were the only symptoms to which they gave rise. But cases were met with in practice where neither of these symptoms were present, but their mechanical pressure, or their protrusion at the vulva, revealed their presence. As to their removal, the clip of the scissors might be dangerous, unless the practitioner was provided with means of immediately thereafter arresting hæmorrhage; and he (the President) preferred to twist them off with forceps, or to remove them with the écraseur, or by the loop of a galvano-cautery, or by the Paquelin cautery.

Dr Haig Ferguson had listened with much pleasure to Dr Haultain's interesting paper. Fibrinous polypi were, of course, known to occur occasionally in the puerperal state; but he had never heard of any case at all similar to Dr Haultain's, in which well-marked fibrinous polypi developed apart from pregnancy. The clear demonstration of the organisation of the blood-clot in utero was most instructive and suggestive. This, to his mind, explained the circumstance that in one case of post-partum fibrinous polypus which he (Dr Ferguson) had removed lately, the polypus (which was as large as a Tangerine orange) was so firmly attached by a strong, apparently fibrous, pedicle to the fundus uteri. No part of the placenta had been left in utero. With regard to the symptoms of mucous polypi, Dr Ferguson called attention to the occasional development of milk in the breasts in such cases. He recalled one case where mammary engorgement and lacteal secretion were the only symptoms in a patient past the menopause. On removal of the polypus the mammary symptoms disappeared, only to reappear shortly afterwards, when it was found that some more polypi had made their appearance. These were thoroughly dealt with, and there was no more trouble.

Dr Fordyce said he had listened to Dr Haultain's paper with much interest. He considered that leucorrhœa was the most prominent symptom of mucous polypi of the cervix. He quoted the case of a patient who came under his care in the summer of 1892, suffering from a very profuse leucorrhœa and painful and scanty menstruation. On vaginal examination a small mucous polypus was found protruding from the external os. When the polypus was removed four others were found occupying the dilated cervical canal, and were also removed by torsion. The operation resulted in a complete cure of the leucorrhœa and dysmenorrhœa; and the patient, who had been sterile for fourteen years, was now eight months pregnant.

Dr Haultain thanked the Society for the manner in which they had received his paper. In mentioning the symptoms associated with these growths he had done so in quite a general way, and leucorrhœa and hæmorrhage being undoubtedly the most prominent and common, he had dwelt on them only; perhaps the most striking point regarding these symptoms was their severity out of all proportion to the size of the growth. He was well aware, as Prof. Simpson said, that very frequently no symptoms of importance were ever present, but that was undoubtedly the exception. He was interested to hear Dr Ferguson had met with a case of lacteal secretion associated with mucous growths, as on two occasions he had had a similar experience, and had difficulty in attributing this symptom to the abnormal uterine condition. He was pleased, though somewhat surprised, to hear that Dr Simpson had seen examples of all the growths he had shown, as he had nowhere been able in the literature to find an authentic example cited of a fibrinous polypus growing in the non-puerperal uterus. He would therefore be very pleased if Prof. Simpson would kindly state a few of the principal points in regard to his case, as it was certainly worthy of putting on record. In answer to Dr Taylor, he might say the patient from whom the numerous polypi were removed was the mother of a family. The removal by scissors he employed chiefly on account of its ease and rapidity, but he always had the thermo-cautery in readiness to check the sometimes copious hæmorrhage.

VI. *Dr Berry Hart* read his paper ON THE NATURE OF THE EXPULSIVE PHENOMENA OF THE FEMALE ABDOMINAL CAVITY.

The President had listened with great pleasure to the interesting paper which Dr Hart had brought before them, and in which he had so suggestively developed the analogy between the mode of evacuation of the gravid uterus and the evacuation of the neighbouring viscera. The only criticism he (the President) would offer was, that it seemed to him that Dr Hart had minimised the effect of the action of the uterus in promoting the progress of its own contents during the second stage. No doubt the accessory powers played a very important part in the expulsion of the fœtus, but that the uterus could effect its expulsion without their aid was well known, as in cases of paralysis, and it was difficult to conceive that it did not play a main part in the extrusion of its contents under ordinary circumstances.

Dr Berry Hart replied.

VII. The paper by *Drs J. W. Ballantyne* and *D. Milligan*, ON A CASE OF SCARLET FEVER IN PREGNANCY, WITH INFECTION OF THE FŒTUS, was held as read. It will appear in a future number of this Journal.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

STROPHANTHUS IN PRURITUS.—Azúa (*Rev. de Med. y Cir. Pract.*, February 22nd) has found tincture of strophanthus useful in pruritus due to stasis of the circulation in the papillary layer of the skin as observed in some cases of cardio-pulmonary disease. He tried it in seven cases of this kind, and in one of itching caused by jaundice. In the latter the treatment had no effect whatever, but in the other cases the pruritus speedily ceased under the administration of strophanthus. Twelve drops of the tincture were given in two doses every day for seven or eight days. As illustrating the effect of the treatment, a case is related in which the patient, a man aged 70, the subject of emphysema and dilated heart, had suffered for many months from troublesome pruritus. After a week's administration of strophanthus the itching entirely ceased. The results of the other six cases were equally satisfactory. The effect of the strophanthus was so striking that Azúa seems inclined to think that the drug may have some specific action on the nerve endings, which may explain its effect in such cases.—*British Medical Journal*, March 25, 1893.

METHYLENE BLUE IN MALARIA.—Neumann (*Pesth. Med.-Chir. Presse*, i. 93) relates three cases of malaria treated with this remedy, and his short experience leads him to consider the drug fairly reliable. The malarial attacks were suppressed and the spleen diminished in size, the patient at the same time improving visibly. With regard to the dose nothing definite can as yet be stated, but 5 to 7 grains daily, administered in gelatine capsules during eight or nine successive days, appeared to be sufficient. No unpleasant symptoms were produced, and the colour, which very quickly manifests itself in the urine, saliva, etc., is absolutely harmless, and disappears with the discontinuance of the drug.—*British Medical Journal*, April 15, 1893.

THE DIETETIC USE OF THE THYROID GLANDS OF THE CALF IN MYXŒDEMA.—Howitz of Copenhagen reports a marvellous case of myxœdema in a lady aged 42 years whom he treated by feeding with the thyroid glands of calves prepared as a palatable food, beginning with two glands per diem. Improvement began as soon as four days after the commencement of the treatment, the œdema disappearing under abundant perspiration and diuresis, with increased action of the heart and slight attacks of fainting. As urticaria appeared the treatment was discontinued for a short time, and later only one gland every second day was given. In less than two months the patient felt perfectly well, although a little weak; she looked fifteen to twenty years younger, had lost 13 kilogrammes in weight, every trace of œdema had disappeared, the voice had become natural, and the hair on the eyebrows began to appear again. The patient has been perfectly well since, and the hair of the scalp grown considerably.—(*Ugeskrift für Laeger*, 1892, Nos. 7, 8).—*The Universal Medical Journal*, Philadelphia, February 28, 1893.

THE EFFECT OF CAFFEINE AND KOLA IN NUTRITION.—The author has conducted an experiment upon a healthy man to determine the comparative effects of caffeine and kola. For three days the subject was fed almost exclusively upon caffeine, and then upon kola for a like period. It was found that neither was capable of entirely satisfying the pangs of hunger; still a very meagre allowance of food (50 grams = 750 grains of bread) sufficed. In both cases, especially with caffeine, the sleep was very restless. The resistance to fatigue was greater under caffeine than kola. The author remarks that individuals, however, are differently affected, as witness the following. He observed that a bicyclist travelled 80 kilometres under kola, and only 40 with caffeine, without becoming fatigued. The diminution of weight in both cases was about 3 kilogrammes. Both substances decrease the quantity of urine secreted. The excretion of nitrogenous matters, as also of the salts, was much decreased. He especially emphasizes the fact that the amount of phosphates in the excreta was greatly lessened. He sees in this a species of economy for the central nervous organs which are affected by the kola and caffeine. He concludes that both the substances possess equal power to overcome fatigue and hunger.—(*Journal de Méd. de Paris*, Dr Paul Rodet).—*The Dietetic and Hygienic Gazette*, March 1893.

THE ACTION OF CAFFEINE AND OF THE PRODUCT OF DISTILLATION OF COFFEE.—To elucidate the action of caffeine on nutritive changes, Keerlein (*Revue de Thérapeutique Générale et Thermale; Pflüger's Archiv*, t. lxi. p. 165) has instituted a series of experiments, using the apparatus devised by Geppert. The apparatus consists essentially of a chamber to receive the air connected with a canula furnished with a valve. The animal (a rabbit, for instance), upon which tracheotomy has been performed, is made to breathe into the chamber. The expired air having been deprived of the carbone dioxide, is returned into the chamber by means of a second canula. By this ingenious method the chamber, after each respiratory movement, receives a quantity of oxygen equal to the difference between the quantity of the gas contained in the inspired air and that contained in the expired air. This difference, in one word, represents the total quantity of oxygen consumed by the animal. It was found that caffeine, in doses sufficiently small as not to produce any spasmodic symptoms, increased the amount of oxygen consumed in the proportion of 17 per cent. On the contrary, the product of distillation of coffee, which is especially charged with coffeol ($C_8H_{12}O_2$), exercises no influence whatever in regard to the consumption of oxygen. Therefore, to judge from the results of these experiences, caffeine and coffee are not economical substances, but that, on the contrary, they are stimulants to nutrition, and the effects which they produce are undoubtedly the result of a direct action on the nervous system.—*Therapeutic Gazette*, March 13, 1893.

MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

Centralblatt f. Bakteriol u. Parasitenkunde, No. 1, 1893.—Dr Eugen Fraenkel of Hamburg-Eppendorf has discovered a bacillus which he takes to be the cause of emphysematous phlegmon, a rather rare inflammatory process in the subcutaneous cellular tissues in the course of which a gas is developed. He has succeeded, in four cases, in cultivating a bacillus different from that of malignant œdema or charbon symptomatique = Rauschbrand.

The bacillus in question is not unlike that of anthrax, perhaps somewhat plumper, absolutely immobile and anærobic, and which in cultures as well as in animal tissues appears sometimes in the form of jointed threads. In three of the cases examined by him there was a mixed infection with the well-known exciters of pus formation, under the influence of which latter erysipelatous and pure phlegmonous processes had been set agoing, and on which the gas-producing bacillus had grafted itself; on the other hand, in one case the infection was exclusively due to the new bacillus, which in two days caused an acute emphysematous inflammation of the subcutaneous and intermuscular tissues in the whole extent of the right lower extremity. This case occurred in a cholera patient, and was very rapidly fatal.

In all the cases, by means of plate cultures in a hydrogen atmosphere, it was possible to isolate the gas-producing bacillus from the pyogenic bacteria which accompanied it, and by inoculation on proper media it was possible to secure pure cultivations. Glycerine agar containing formate of soda was found particularly suitable for such cultivations, and the bacteria grew luxuriantly in the incubator with great formation of gas. With so much vehemence was the gas formed that it often broke up the agar cylinder. The gas was not analyzed, but it smelt powerfully of sulphuretted hydrogen and volatile fatty acids. The bacillus stains well with aniline colours, but best with the Lœffler and Gram-Weigert solutions.

Subcutaneous injections of bouillon containing well rubbed up pieces of the formate-agar cultures cause, in guinea-pigs, a severe, non-purulent, spreading inflammation (attended by gas-formation) of the subcutis and neighbouring muscular tissues, which kills in 24–48 hours. Gradually the diseased parts necrose deeply, and after the sloughs separate (if life continue) the parts rapidly heal, leaving a dense and fast adherent cicatrix.

One infection does not protect from a second; early incisions of the inflamed parts hasten the healing process.

In the tissue fluids obtained by aspiration the bacilli are found between the cells; the fluids are inodorous, serous-hæmorrhagic, clear, and studded with air-bubbles; in sections the bulk of the bacterial vegetation is found in the lymph spaces of the subcutaneous and intermuscular cellular tissues.

Ibidem, Nos. 11 and 12.—Dr Amann of Davos Platz gives statistically the results of 4000 examinations of sputum obtained from 1792 different patients.

A. Tubercle bacilli were demonstrated in 1498 (83 per cent.) of the patients.

B. The tubercle bacilli were found:

On 1st examination in	1027	patients	=	69 per cent.
„ 2nd „	291	„	=	19 „
„ 3rd „	105	„	=	7 „
„ 4th „	59	„	=	4 „
„ 5th „	11	„	=	0·7 „
More than 5 examinations in	5	„	=	0·3 „

In 30 per cent., therefore, many examinations were needed to find the bacilli.

C. For several reasons, all the 1498 patients cannot be included in the subjoined statistics, but 856 of them, in which a sufficient series of examinations was made, remain available.

D. In those 856 cases there was observed on the whole:

An entire and permanent disappearance of the bacilli in sputum in 16 cases = 1·7 per cent.

A considerable decrease of the bacilli in sputum in 144 cases = 16·8 per cent.

A considerable increase of the bacilli in sputum in 254 cases = 29·7 per cent.

No considerable alteration in the number of the bacilli in sputum in 442 cases = 51·5 per cent.

It is to be remarked that in all the sixteen cases the sputum also disappeared. It is also to be remarked that in a few of those patients in whom no disappearance of bacilli could be shown the sputum ceased, and therefore none could be obtained for scrutiny.

During the winter season of 1889-90 influenza was epidemic in Davos. There was observed in 205 patients:

Entire disappearance of bacilli	in	2	cases	= 1	per cent.
Considerable decrease	„	21	„	= 11	„
„ increase	„	115	„	= 56	„
No alteration	„	66	„	= 32	„

F. During season 1890-91 (tuberculin treatment) there was verified in 303 patients:

Entire disappearance of bacilli	in	2	cases,	circa	0·66	per cent.
Considerable decrease	„	73	„	„	24	„
„ increase	„	191	„	„	62	„
No alteration	„	37	„	„	13	„

G. If the seasons 1886 to 1892 are examined, Amann finds in 545 patients:

Disappearance of bacilli	in	12	cases,	circa	2·2	per cent.
Considerable decrease	„	112	„	„	21	„
„ increase	„	169	„	„	31	„
No alteration	„	252	„	„	46	„

H. The temporary disappearance and reappearance of the bacilli was observed in 7·7 per cent. = 66 patients (of 856 examined), and, indeed, in the 16 patients where the bacilli disappeared entirely.

In 38 cases in which the number of bacilli distinctly diminished.
„ 9 „ „ „ „ remained the same.
„ 3 „ „ „ „ increased.

I. In 31 cases ending fatally there was shown:

Disappearance of bacilli	in	0	cases	=	0	per cent.
Considerable decrease	„	2	„	circa	6	„
„ increase	„	21	„	„	68	„
No change	„	8	„	„	26	„

In 7 cases the increase of bacilli was very considerable; in 8 cases it was colossal.

J. The disappearance of bacilli in the 16 cases happened after the subjoined length of cure in Davos:

6 per cent.	=1 case	after about	6 weeks	Without examination.
12·5 „	=2 cases	„	6 months	
25 „	=4 „	„	1 year	
25 „	=4 „	„	2 years	
20 „	=3 „	„	3 „	One case examined.
6 „	=1 case	„	5 „	Many examinations.
6 „	=1 „	„	6 „	„ „

K. The relative quantity of bacilli in sputum, reckoned according to Gaffky's scale, was as follows:

Scale 1 to 2,	in 5 cases	=31	per cent.
„ 3 „ 4,	„ 5 „	=31	„
„ 5 „ 6,	„ 4 „	=25	„
„ 7 „ 9,	„ 2 „	=22·5	„
„ 10,	„ 0 „	= 0	„

L. In 31 fatal cases the last examination before death, according to the Gaffky scale, gave the number of bacilli as follows:

Scale 1 to 2,	in no case.		
„ 3 „ 4,	„ 2 cases,	circa 6·5	per cent.
„ 5 „ 6,	„ 8 „	„ 26	„
„ 7 „ 9,	„ 11 „	„ 35	„
„ 10,	„ 10 „	„ 32	„

M. Elastic fibres were seen in 8 patients whose sputa was always free of bacilli; 4 were cases of bronchiectasis, 1 of lung abscess, and 3 were of doubtful nature.

Of the tuberculous patients, curly fibre was not found in 11 per cent. = 167 patients. The great part of those patients were young, with incipient phthisis or apical catarrh; in the other 88 per cent. = 1331 patients, both bacilli and elastic tissue were found. The finding of bacilli in the sputa of one and the same patient is more constant than that of elastic fibres. (This is contrary to my experience.—Transl.)

N. Of the 16 cases in which bacilli vanished, the sputum contained in 11 cases no curly fibres, and in 5 they were to be found.

O. In the 31 fatal cases of tubercular patients elastic fibres were never missed, and in the greater part of them their number was relatively large.

A persistent increase of the quantity of tubercle bacilli in the sputum has never been seen by Dr Amann to go hand in hand with a permanent bettering of the general health. He thinks the opposite the case, viz., an undeniable parallelism between the numbers of the bacilli and the progress or arrest of the disease. A definitive healing of lung tuberculosis without a total and permanent disappearance of the tubercle bacilli in the sputum is not thinkable. In the 16 cases wherein Dr Amann was certain that the bacilli had vanished, a wonderful improvement of the general health went hand in hand with their disappearance.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P. Ed., Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; late Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

EPITHELIOMA ADENOIDES CYSTICUM: MULTIPLE BENIGN CYSTIC EPITHELIOMA OF THE SKIN.—The term epithelioma, at one time restricted to cancerous new growths, has received lately a wider range of applicability. There may be benign or innocent new formations as well as malignant ones. Thus molluscum contagiosum has become epithelioma molluscum, and the rare and interesting disease, two names for which head this notice, though there are a number of other synonyms, is the most recent member of the group. Brooke of Manchester and Fordyce of New York have almost simultaneously given excellent and nearly identical descriptions of it. The affection presents itself in the form of small tumours, varying in size from the head of a pin, projecting very slightly above the surface, to that of the half of a small pea. They are at first of the colour of the surrounding skin, or may be a little darker, as if some minute body of neutral tint were embedded beneath the epidermis. As they increase in size they become often shining and translucent, even so as to appear to contain fluid. Nearly all contain one or more tiny white milium-like bodies, which are plainly visible even to casual inspection. They feel firm without being hard, are situated in the skin, and move with it. The lesions may occur on any part of the body,—doubtfully, perhaps, on the lower limbs. In the five English cases and in the two American the eruption predominated or was exclusively confined to the skin of the head and face; while in those recorded in France and Germany, lesions either were not present on the face at all, or if there, were enormously outnumbered by those on the body. The course of the affection is slow,—varying, however, in this respect. It begins in youth, for the most part between the tenth and fourteenth years, so far as the insidious and inconspicuous origin permits the patient to judge; in one case it is said to have been noticed later in life. In no case which has yet been recorded has there been any attempt at spontaneous involution; on the contrary, the lesions either persist unchanged for years, or increase till they reach the size of a small pea, a limit which they never exceed. In the cases related by Fordyce the majority of the larger growths were covered with minute capillaries, and, intermingled with the lesions, telangiectases and black pigment spots were found. Any subjective symptoms are, if present at all, slight—at most a little pricking when the skin is hot, or occasional itching; the nodules themselves are not painful. The papule is formed of a cellular new growth lying in the corium, or of peculiar strands or rope-like prolongations of epithelium, intricately convoluted. Thus the growth, in some sections, at first glance closely resembles an adenoma of the sweat-coils. There are also cysts, circular or oval, containing either colloid matter or partly colloid, partly concentric layers of apparently horny epithelium. As to the origin of the growths, Török and others suggest that these are developed tardily from embryonic epithelium, either gland-buds or débris; but both Brooke and Fordyce show that they originate directly from the epidermis, and not from the epidermic stratum alone, but also from the epithelium of the hair sacs. There is also a hereditary element, for three of Brooke's cases occurred in a mother and two daughters, and Fordyce's were in a mother and daughter. Besides the admirable illustrations furnished by these authors, both of the clinical appearances and microscopic anatomy, the disease has been beautifully represented by Dr Perry in the *International Atlas of Rare Skin Diseases*, Part 3.—*British Journal of Dermatology*, September 1892, and *Journal of Cutaneous and Genito-Urinary Diseases*, December 1892.

HERPES ZOSTER, AND ITS INCLUSION AMONG INFECTIVE DISEASES. —Wasielewski discusses at considerable length and with much care the theories at the present moment held as to the nature of zona. He first inquires into the arguments which have been employed to prove that it is connected with trophic nerve disturbance. He questions if it has been satisfactorily proved that pathological processes in the tissues can be produced by nerve influence. The theory held as to herpes zoster forms the main support of the theory of tropho-neuroses. The adherents of this view move in a vicious circle: "there are trophic nerves, consequently zoster is a tropho-neurosis; zoster is a disease of the nervous system, therefore there are tropho-neuroses." The very localization of the lesion in the nervous system in zoster is undetermined. Thus it has been laid in the spinal ganglia, in the peripheral nerve trunks, in the trophic centres, or it has been thought due to reflex action in cases otherwise not readily explicable. Then as to the stimulant, which through the medium of the nervous system occasions the eruption, this has been stated to be mechanical, chemical, or thermic. Traumatic zoster has been described, yet it manifests itself in but a fraction of cases of wounds or injuries. Recently, it has been suggested to unite the nervous theory of zoster with that connecting it with infection, for the observations on the epidemic appearance of zoster have been too frequent to allow of this factor being left out in our conception of the disease. If so, then the selection of the point of attack by the parasite is peculiar. Thus the motor fibres are constantly spared, the sensitive only partially involved. It has been held that neuralgia occurs in all cases. In a considerable proportion of instances neuralgia is present, and from its severity assumes a prominent position in the phenomena, yet it is but a complication. Pfeiffer has in 1889 originated a new theory of zoster in publishing his paper on "The Distribution of Zoster in the course of the Cutaneous Arterial Territories, and its relation to the Acute Exanthemata." His observations now extend over 274 individual cases. It has been observed that the eruption in zoster may effect more than the tract supplied by one cutaneous nerve. In some cases tabulated by Dr Pye-Smith one must assume that several were affected—in one no less than seven—and that while the 3–5 were diseased, the 6th remained sound, and the 7–10 were again implicated. Again, in zoster pectoralis, while the eruption runs transversely or horizontally, the nerves themselves take a course from above downwards and forwards. Similar statements might be made with respect to other regions. Sometimes an intercostal space in its entire extent from the spine to the median line in front is affected. At the same time it must be admitted that in a number of instances proof cannot be furnished that a single artery supplies the whole region affected with zoster. If the view be expressed that zoster follows the course of the arteries, it is only intended that the materies productive of the vesicular eruption is conveyed to the affected portion of skin by means of the blood channels. That in this way portions of the noxious substance may be carried to remote parts is not surprising. Wasielewski is of opinion, after consideration of all the facts, that the nervous origin of zoster must be abandoned, and that substituted by Pfeiffer accepted. He then gives a *résumé* of a number of epidemics of zoster, with the object of ranking it under the acute infective diseases. He notes that there are prodromata of various kinds in many instances, and in a considerable proportion slight rigors and feverish symptoms usher in the eruptive stage. The pains consist in burning sensations, in stitches, and in distinct neuralgia. These are chiefly induced by inflammation of the skin, yet appear frequently enough to have their origin in actual disease of the nerves. He concludes his interesting contribution by an account of a curious case. A girl who had suffered for long from tuberculosis of the lungs was suddenly seized with pain in the lower part of the thorax on both sides. Some days later, while she still complained of the pain, there appeared a zoster on the right side, which in front occupied the region supplied by the eighth and ninth, behind, that of the tenth and eleventh intercostal nerves. On the fourth day there appeared first on the left side of the abdomen, then on the whole trunk, the upper arm, thigh, and face, quite discrete vesicles of herpes, with wide interspaces between. A slight rise of temperature accompanied on two evenings the extension of the herpes to the body. In other respects the case was typical. He cites an almost similar case recorded by Lipp. He concludes by remarking that to include such under the nerve theory an extremely wide nerve disturbance must be presupposed.—*Abdruck aus den Correspondenz-Blättern des Allge. Aerztlichen Vereins für Thüringen*, Jahrgang XXI., No 5, 1892.

PERISCOPE OF OBSTETRICS AND GYNÆCOLOGY.

By J. W. BALLANTYNE, M.D., F.R.C.P. Ed., F.R.S.E., Lecturer on Diseases of Infancy and Childhood, and on Midwifery and Gynæcology, School of Medicine, Edinburgh.

DEFORMED FŒTUS WITH CONGENITAL TUBERCULOSIS.—Dr Sarwey reports an interesting case of pregnancy which terminated at the eleventh month in the birth of a monstrous male fœtus, 19 cms. in length and weighing 770 grammes. It was in no way macerated, and its most striking abnormalities were a large hernia cerebri, imperfect ossification of the bones of the cranial vault, absence of the sacrum, cleft palate, and defective development of the fingers and toes, which were small and stumpy. In addition to these it was found that there was a cleft of the posterior arch of the atlas vertebra, and that in the bodies of the first three cervical vertebræ there was a bean-sized caseous, partly calcified, abscess. Microscopically this had the characteristic appearances of a tubercular abscess. There were numerous giant cells; but no tubercle bacilli were detected, and inoculation experiments with the caseous material gave no very clear results. The absence of bacilli is accounted for by the author on the supposition that the tubercle was in a state of retrograde metamorphosis. The placenta and cord were normal, and there were no signs of congenital syphilis. The mother, aged 30, was healthy, a iv.-para, and her previous labours had all resulted in the birth of healthy well-formed infants. In this pregnancy she got a severe shock to her nervous system at about the third month: news was brought to her of the sudden death of her husband from an accident. She herself was free from tubercular disease, but her husband had suffered for some time from cough and expectoration, and his father had died from pulmonary tuberculosis. The pregnancy, according to the data furnished, seems to have lasted for 341 days.—*Archiv für Gynäkologie,* Bd. xliii. Heft 1.

THE QUESTION OF THE BACTERIAL ORIGIN OF ECLAMPSIA.—Dr Döderlein has carefully investigated the subject of the microbic origin of eclampsia, and his results support the view of Hägler and Hofmeister, which is opposed to that of Gerdes, who believes that micro-organisms are the cause of eclampsia. His experiments were made upon the material obtained from eight cases of eclampsia. In all the eight cases the maternal urine, the fœtal blood, and the placental tissue were used for culture experiments; in four the maternal blood, and in two the fœtal urine, were also obtained. Agar and gelatine were the media employed, and all the tubes, with the exception of those that had been inoculated with the maternal urine, remained sterile.—*Centralblatt für Gynäkologie,* No. 1, 1893.

CHOLERA AND PREGNANCY.—Dr L. Gaillard gives his experience of cholera as a complication of the pregnant state during the epidemic of 1892. He saw seven cases, of which two were slight and recovered, whilst the other five had a fatal termination. Of the fatal cases, four died without expulsion of the fœtus having taken place. In one of these the fœtus died on the second day, and the mother on the sixth; in another the fœtus perished on the sixth day, and the mother on the ninth; in the third the fœtal heart-sounds ceased on the seventh day of the disease, whilst the mother died on the tenth day; and in the fourth case, which was complicated by pulmonary tuberculosis, the fœtus died on the ninth day and the mother on the fourteenth. In two of these cases intravenous transfusion was employed, about 2 litres of Hayem's solution being injected into the internal saphena vein, but without producing any good results. The author explains the absence of premature labour in these cases by the supposition that the patient had not the strength to expel the dead fœtus. In none of these instances was the cholera of a very virulent type; and the same remark applies to the fifth fatal case, in which death occurred on the eleventh day. In this last-named instance, however, a macerated infant was expelled some hours before the death of the mother. Dr Gaillard did not expect that these cases would prove fatal, for the clinical symptoms were not so severe as to warrant a very grave prognosis; and he explains the results by supposing that the pregnant woman is in a state of diminished resistance, and less able to fight against an infectious disease.—*Archives de Tocologie*, January 1893.

CÆSAREAN SECTION UPON A RACHITIC DWARF.—Guéniot showed to the Obstetrical Society of Paris a young primipara upon whom he had, twenty-six days previously, performed the Cæsarean operation. The narrowness of the pelvis was extreme, both the uterus and the bladder lying completely above the brim; the placenta was situated on the anterior wall of the uterus, and had to be very rapidly cut through; and the fœtus had a general conformation closely resembling that of the mother,—that is to say, it had a very prominent forehead, very short limbs, etc. Mother and child both survived. This was evidently a case of achondroplasia in mother and fœtus.—*Bulletins et Mémoires de la Société Obstétricale et Gynécologique de Paris*, January 1893.

MENSTRUATION IN CASES OF BACKWARD DISPLACEMENT OF THE UTERUS.—Dr Herman gives some interesting statistical notes on menstrual irregularities in 388 cases of backward displacement of the uterus. He comes to the conclusion that the proportion of women with backward displacements who suffer from abnormal hæmorrhage is larger than that among women whose uteri are in normal position, and that this justifies the belief that in a small proportion of cases, probably about 10 per cent., the displacement is the cause of the hæmorrhage. He also finds that menstrual pain is more frequent in women with backward displacement of the uterus than in the general average of women. Of women with retroversion or retroflexion of the uterus who are menstruating, pain appears to be absent in only about one-fifth, while of women in general two-fifths or more menstruate without pain. Menstrual pain associated with backward displacement of the uterus appears to be rather more frequent in those who menstruate profusely than in those who menstruate scantily. The percentages of patients with backward displacements who suffer from increased pain and from increased hæmorrhage are very nearly alike (38 per cent. of pain and 40 per cent. of hæmorrhage), and this fact suggests a close alliance as to cause.—*Transactions of the Obstetrical Society of London,* Part iii., 1892.

A CASE OF THORACOPAGUS.—Dr W. W. Jaggard describes a specimen of joined twins belonging to Förster's group of the terata anakatadidyma, and bearing the name sternopagus tetrabrachius. The twins were united by a single sternum, and possessed a common thoracic and abdominal cavity. There was a large double liver, and the rest of the abdominal viscera, save the jejunum and a portion of the ileum, were double. The lungs were double, and there were two separated hearts (each in its own pericardium), of which the left one was small and rudimentary. The mother was 29 years old, had had two previous normal labours, had no special symptoms during this her third pregnancy, save the unusually large size of the abdomen, and she brought forward as an explanation of the deformity an alleged maternal impression at the third week of pregnancy. The double monster died in the act of delivery, considerable force being required for its extraction. Mother made a good recovery.—*American Journal of Obstetrics,* January 1893.

A FŒTUS WITH NUMEROUS DEFORMITIES.—Dr Trott records the case of the birth of a seven months' fœtus with numerous interesting deformities. The left side was more developed than the right, and it was doubled on itself, so that the right ear lay on the right hip, and the right arm around the waist. There was a large meningocele, the parietal, frontal, and part of the occipital bones being rudimentary. There was defective development of the face, all the parts except the left eye and ear having a low grade of development. The pleuro-peritoneal cavity was not closed anteriorly, and there was complete eventration. The left upper limb showed a hand with four digits, the carpus, forearm, and shoulder girdle being made up of nodules of cartilage. The right upper limb was normal. The lower extremities were normal save as regarded the condition of the toes. There was a trace of the second branchial cleft. A history of tight-lacing in pregnancy was elicited.—*Ibid.*

SURGICAL PERISCOPE.

By Kenneth M. Douglas, M.D., F.R.C.S. Edin.

Tubercular Joint Disease.—Dr William Alexander contributes a valuable paper on this subject, embodying the results of a large experience. The important influence of unnatural conditions in regard to food, fresh air, and exercise are touched on. Speaking on the influence of injuries in the production of these affections, Dr Alexander remarks that "joints vary in their liability to strains and injuries, and it might be thought that this liability should correspond to the frequency with which the disease would appear in any particular joint. But joints also possess a varying facility for rest as well as a liability to injury, and the balance struck between these two will be found to correspond closely with the incidence of disease." The knee joint is, in his experience, the joint most frequently injured, but it recovers in most cases rapidly and completely, the hip joint being more frequently the subject of strumous disease. The mechanical reasons for this are detailed at length. But, remembering that sometimes only one child of a family is delicate, though all have been exposed to similar influences and to trivial injuries, Dr Alexander thinks such cases are to be explained by looking on a diathesis as an error in the construction of the individual regarded simply as a vital machine, such error being probably due to exaggeration of some paternal or maternal weakness or peculiarity, or to accidental defects produced during the ante-partum period of the life of the child. To meet the objection that a diathesis so produced would manifest itself at birth, whereas a strumous child often remains healthy for some time, Dr Alexander suggests that the pre-natal injuries may not be of consequence till the child begins to digest the ordinary food, to exercise self-control, and to acquire knowledge, but that then the weak point becomes apparent. The signs of joint disease are carefully entered into, and this part of the paper is copiously illustrated by plates taken from photographs. Dealing with the subject of treatment, two practical points are emphasized—the critical character of the period when the splint is removed and movement resumed, and the value of the thermo-cautery in suitable conditions, *i.e.*, where the granulative tissue is spreading or threatens to break down. Dr Alexander repeats the application once a month, and he never had occasion to use it oftener than three times in any case.—*Liverpool Med. Chirurg. Journal*, January 1893.

Clinique for Genito-Urinary Diseases—Hospital Necker.—In opening his winter course M. Guyon placed before his class a *résumé* of the operations done during the preceding year. These operations numbered 367, and gave a mortality of 5·90 per cent.—292 on the urinary organs, with 9 deaths (3 per cent.); 75 on the genital and other organs, with 2 deaths (2·6 per cent.). Operations on the urinary organs were divided into three groups—(1), On the urethra, 169, with 2 deaths (1·19 per cent.), one in the case of a man aged 67, from pulmonary congestion after urethrotomy for stricture with fistulæ, the other that of a man aged 62, in a late stage of extravasation of urine; (2), on the bladder, 102 operations in all, with 4 deaths (3·92 per cent.); 69 lithotrities, with 2 deaths in old patients (aged 70 and 72) with bad cystitis, one of them paraplegic; 11 suprapubic cystotomies for tumour, with 1 death from suppression after exploratory operation in a case of tumour of the ureter—in 4 cases of this group the bladder wall was resected, in 1 division of the symphysis was required; of 11 suprapubic operations for other conditions (6 for stone) all recovered but 1, a patient with genito-urinary and pulmonary phthisis; (3), operations on the kidney, 21, with 3 deaths (14·20 per cent.), 1 on the eleventh day after nephrotomy for strumous kidney, another on the ninth day after nephrectomy for hydronephrosis (the opposite ureter being found to be plugged by a calculus), the third after exploratory laparotomy in a case of tubercular kidney. One death followed removal of the uterine appendages, another from peritonitis after operation for fæcal fistula.—*Annales des Maladies des Organes Génito-Urin.*, December 1892.

PACKING THE BLADDER AFTER SUPRAPUBIC CYSTOTOMY.—M. le Dr Desnos draws attention to this mode of dressing in suitable cases, and declares that if one is careful to lay the drainage-tube in place (the syphon-tube of MM. Guyon and Perin), and pack the gauze in tightly, the urine flows almost wholly through the tube, the gauze being only slightly wet. The tube must, however, pass to the base of the bladder. The tampons or packing may be left for four to six days; the second packing cannot be done so firmly, and the urine filters by the dressing through the hypogastric wound. The procedure is applicable in cases of tubercular ulceration, where it actively encourages repairs, and very specially in cases of bladder tumour with intractable bleeding. The paper is illustrated by records of three cases—one of tubercular disease, the others of tumour formation with serious hæmorrhage.—*Ibid.*, January 1893.

HERNIA OF FALLOPIAN TUBE AND BLADDER.—M. le Dr Lejars reports this unusual case. The patient, a woman aged 39, suffered from inguinal hernia with signs of strangulation—nausea, vomiting, obstruction of the bowels for thirty-six hours, tympanitis, and abdominal tenderness; the swelling was about the size of an egg, oval, slightly discoloured (red), tense, dull on percussion, obscurely fluctuating, painful, and irreducible. It was regarded as an entero-epiplocele with strangulation. On operation the sac was found to contain a dark-coloured, offensive-smelling fluid, and appeared empty, containing neither bowel or omentum; upon its posterior wall ran a cord-like structure, dark red and black in parts, expanding at one extremity, at the other entering the constricting ring;

this was quickly recognised to be the Fallopian tube from its fimbriated end, tortuosity, and calibre. Pressure upon it caused mucus and pus to ooze out; the whole structure was gangrenous. The ovary was not present in the sac. The constriction being divided in the usual way, the tube could then be drawn down, and the healthy portion of it brought into view; a ligature was placed round it, and it was divided with the thermo-cautery, the gaping opening being carefully cauterized; the stump then was allowed to slip back into the pelvis. After careful disinfection of the parts, an attempt was made to obtain a radical cure, but on trying to free the posterior wall of the sac, it was found intimately to adhere to a dense fibrous layer, as if from old-standing peritonitis; in stripping the sac from this tissue there were disclosed a series of small transparent cyst-like projections, giving the impression of a herniated cystic ovary. On opening one of them, however, fluid, which was unmistakably urine, flowed out, the fibrous layer having been the bladder wall, of which the muscular tissue had become atrophied and unrecognisable. The wound having been purified and protected from further outflow of urine, the separation and removal of the sac was hastily completed, and the abdomen was closed. To obtain satisfactory suture of the bladder wall it was thought advisable to resect a portion of the thinned coats, and then the suture was accomplished (in three layers), the wound closed, and a dressing applied. The operation lasted an hour and a half, a catheter being introduced and retained till next day. The case did well, but a fistula resulted, and persisted for some months, healing, however, without interference. The paper also contains notes of 8 previously recorded cases. Of the 9 cases, 4 were inguinal and 5 crural herniæ; 5 occurred on the right side, in 4 the side is not stated; the patients' ages were between 36 and 70; strangulation was present in 5 cases, and its signs were most intense. It is important to recollect that the hernial sac is infected directly from the tubal opening, in the present instance the tube being full of pus. The important influence exercised by uterine conditions on the occurrence of these tubal herniæ is noted; in M. Lejars' case, as in that of Bérard, a large fibroid had caused a displacement of the tube.—*Revue de Chirurgie*, January 1893.

A CASE of a hernia of the Fallopian tube is also reported by Dr Hemans.—*Trans. American Surgical Assn.*, 1892 (vol. x.)

Part Fifth.

MEDICAL NEWS.

UNIVERSITY OF EDINBURGH.—The following is the official list of Candidates who passed the First Professional Examination held in March 1893:—Francis Acton, A. H. Algar, H. L. Apthorp, T. R. W. Armour, J. R. Atkinson, J. G. Bailey, A. G. Beecroft, J. A. T. Bell, L. F. B. Biccard, G. J. Blackmore, E. J. Bray, W. H. Brendon, S. O. Browne, John Bruce, L. M. Cairns, T. M. Callender,

A. F. Cameron, C. M. Cooper, J. B. Cusine, Wm. Finlay, W. G. C. Geekie, Robert Gellatly, W. F. Godfrey, D. D. Gold, James Graham, J. C. Hastings, J. H. Henderson, W. H. J. Hollinshead, E. H. Irwin, Mowbray Jackson, J. B. Jamieson, T. F. Johnston, T. N. Johnston, E. H. Jones, Walter Jones, W. G. N. Keith, C. H. Kruger, C. D. Lander, J. F. Lindsay, T. V. Lockhart-Mure, A. L. Low, David M'Askie, J. J. L. Macfarlane, F. M. M'Intosh, Edwin Matthew, Donald Morison, Robert Mudie, S. K. Norris, G. W. Payne, C. H. Phillips, G. M. Pratt, E. C. Racker, D. R. Rees, G. L. Roberts, John Robertson, J. G. Ross, T. A. Ross, L. C. Saldanha, A. E. Scott, Robert Selby, G. B. Serle, M. C. C. Seton, J. T. Sherlaw, J. A. Shoolbread, T. B. Shoolbread, F. M. Simmonds, J. D. Slight (M.A.), A. L. P. Smith (M.A., B.Sc.), J. B. Stewart, J. F. Strickland, H. T. Thacker, J. T. Titterton, J. R. H. Walker, G. F. Waterston, C. R. White, A. R. Wight, W. C. Wight, F. T. Wills, J. F. Wilson, J. F. Wolfe, R. S. Young, W. A. Young.

The following is the official list of Candidates who passed the Second Professional Examination during March and April:—W. D. Adams, M.A., C. C. Aitken, G. N. Alexis, S. H. B. Allison, B.A., John Atkinson, T. M. Bartlett, J. M. Beattie, M.A. (with distinction), R. W. Beesley, H. M. Benson, William Bethune, W. H. Borrie, J. E. Bowes (with distinction), H. R. Brown, R. T. Bruce, Morton Burnet, A. J. Campbell, A. K. Campbell, O. H. Chapman, W. W. Chipman, B.A., R. M. Clark, Robert Cochrane, M.A., J. A. Coutts, D. M. R. Crichton, Alexander Dall, J. M. Dalziel (with distinction), H. A. C. Davidson, R. T. Davidson, T. H. C. Derham (with distinction), C. W. Eames, A. H. Edwards, H. P. Elliot, F. H. Fairweather, Thomas Finlay, John Forbes, M.A., T. D. Forbes, J. V. Forrest, A. G. F. Forster, Simon Fraser, Thomas Gibson, H. H. Gill, James Gillies, J. C. Good, S. D. Graham, W. Y. Grant, G. D. Gray, E. D. W. Greig, John Henderson, R. T. Herdman, Arthur Heys (with distinction), P. T. Hughes, W. H. Hunter, T. H. Jamieson, D. A. Johnstone, W. E. Johnstone, M.A., J. H. Jones, B. C. Kelly, Richard Kenyon, A. E. Kidd, D. F. Laidlaw, J. A. Laing, David Landsborough, M.A., C. F. Lassalle, T. G. Lewis, T. G. Lusk, D. G. MacArthur, A. J. MacDougall, A. J. M'Ilroy, H. D. N. Mackenzie, R. L. Mackirdy, M.A., Kenneth MacLean, J. G. Macmillan, N. H. Macmillan, J. F. Macphail, M.A., J. D. M'Rae, Colin M'Vicar, M.A., Neil Macvicar (with distinction), W. R. Martine, F. O. N. Mell, William Mitchell, K. W. Monsarrat, R. S. Mowat, David Orr, C. W. Owen, A. A. Palmer, Rodie Parkhurst, J. A. Parsons, G. W. S. Paterson, J. B. Pearson, G. L. K. Pringle, J. C. Rait, A. P. Ross, J. J. Ross, G. H. Ruston-Harrison, J. M. Rutherford, Robert Samut (with distinction), George Shaw, C. R. Sheward, S. S. Skinner, B.A., Thomas Smith, A. M. Stafford, J. G. Standing, John Struthers, F. W. Taylor, James Watson, J. R. Watson, M.A., Thomas Watson, Alexander Whytt, E. D. Williams, W. H. Williams, John Wilson, James Wood.

The following Candidates have passed in Anatomy and Physiology:—E. R. Dodds, Thomas Evans, F. W. B. Fitchett, J. S. Flett, M.A., B.Sc., Wilfrid Glegg, D. J. Graham, P. J. Henderson, J. W. Keighley, John Landsborough, W. A. Potts, B.A., C. W. Ruston-Harrison, E. W. K. Scott, R. G. Selby, C. M. Simpson, H. J. F. Simson, Arthur Stein, W. A. Stephen, M.A., W. H. Thomson, M. L. M. Vaudin, A. R. Wilson, M.A., W. de W. Wishart.

ROYAL COLLEGES GOLF CLUB.

The Fourth Annual Spring Meeting of this Club was held at Gullane on March 22nd, in magnificent weather.

The Trophy was played for by teams of the Royal College of Physicians and the Royal College of Surgeons. The Cup was won by the Physicians by 10 holes.

Physicians.	Holes.	Surgeons.	Holes.
Dr Haultain,	3	Dr Argyll Robertson,	0
„ A. D. R. Thomson,	1	„ Blaikie,	0
„ Stitt Thomson,	0	„ Finlay,	6
„ Ronaldson,	0	„ Wallace,	1
„ Robertson,	0	Mr Chiene,	1
„ Boyd,	3	„ Duncan,	0
„ P. A. Young,	5	Dr Naismith,	0
„ Thin,	0	Mr H. A. Thomson,	2
„ Carmichael,	1	„ Cathcart,	0
„ Ballantyne,	1	Dr Cadell,	0
„ Dunlop,	0	„ Dunsmure,	0
„ Gillespie,	3	„ Wood,	0
„ Maclagan,	4	Mr Hodsdon,	0
„ Noël Paton,	3	Dr Thatcher,	0
„ Buist,	0	„ Berry,	4
	24		14

The players were most hospitably entertained to lunch at Gullane House by the Captain, Dr Batty Tuke, and in the afternoon various foursome and other matches were played.

DR J. LINDSAY PORTEOUS, late of Kirkcaldy, has been elected a Fellow of the New York Academy of Medicine.

TABLOIDS OF COMPRESSED DRY THYROID GLAND POWDER.—We have received from Messrs Burroughs, Wellcome, & Co., of London, specimens of this new and very convenient preparation. Each tabloid represents 5 grains by weight of a healthy sheep's thyroid, and they are said to keep perfectly in any climate and to possess all the virtues of the fresh gland. They have the great advantage over the fresh gland of enabling an exactly uniform dose to be given easily, and are also likely to be taken more readily by fastidious patients. It would be difficult to imagine a more convenient form in which to prescribe this new remedy.

PUBLICATIONS RECEIVED.

WILLIAM H. BENNETT, F.R.C.S., etc.,—Clinical Lectures on Abdominal Hernia. Longmans, Green, & Co., London, 1893.

GEORGE A. BERRY, M.B., etc.,—Diseases of the Eye. Second Edition. Young J. Pentland, Edinburgh and London, 1893.

H. BOCQUILLON-LIMOUSIN,—Formulaire des Médicaments Nouveaux et des Médications Nouvelles. Fourth Edition. J. B. Baillière et Fils, Paris, 1893.

WILLIAM W. BROWNING, A.B., LL.B., M.D., — Modern Homœopathy: its Absurdities and Inconsistencies. Wm. J. Dornan, Philadelphia, 1893.

Dr EMIL BURCKHARDT and E. HURRY FENWICK, F.R.C.S. Eng., etc.,—Atlas of Electric Cystoscopy. J. & A. Churchill, London, 1893.

Sir WM. B. DALBY, F.R.C.S., etc.,—Diseases and Injuries of the Ear. J. & A. Churchill, London, 1893.

E. HURRY FENWICK, F.R.C.S. Eng., etc.,—The Cardinal Symptoms of Urinary Disease. J. &. A. Churchill, Lond., 1893.

FRANK P. FOSTER, M.D.,—An Illustrated Encyclopædic Medical Dictionary, Vol. 3. Sampson Low, Marston, & Co., London.

From Hospital Ward to Consulting Room: A Medical Autobiography. By a Graduate of London University. H. K. Lewis, London, 1893.

G. A. GIBSON, M.D., etc., and WM. RUSSELL, M.D., etc.,—Physical Diagnosis. Second Edition. Young J. Pentland, Edinburgh and London, 1893.

J. DELPRATT HARRIS, M.R.C.S. Eng.,—Scab Healing and its Application in General Surgery. H. K. Lewis, London, 1893.

FRANK HAYDON, — Ophthalmic Atlas. Down Bros., London.

HENRY E. JULER, F.R.C.S., etc.,—A Handbook of Ophthalmic Science and Practice. Second Edition. Smith, Elder, & Co., London, 1893.

HENRY P. KENWOOD, M.B., etc.,—Public Health Laboratory Work. H. K. Lewis, London, 1893.

EMIL KLEEN, M.D., etc.,—Carlsbad: A Medico-Practical Guide. G. P. Putnam's Sons, London, 1893.

Prof. ALEXANDER LUSTIG and Prof. P. BAUMGARTEN,—Diagnostik der Bakterien des Wassers. Gustav Fischer, Jena, 1893.

P. J. MÖBIUS,—Abriss der Lehre von den Nervenkrankheiten. Ambr. Abel, Leipzig, 1893.

Dr RICHARD NEUMEISTER,—Lehrbuch der Physiologischen Chemie mit Berücksichtigung der Pathologischen Verhältnisse. Gustav Fischer, Jena, 1893.

CHARLES E. PAGET,—Some Lectures by the late Sir George E. Paget. Macmillan & Bowes, Cambridge, 1893.

HENRY POWER, M.B., and L. W. SEDGWICK, M.D., — Lexicon of Medicine and the Allied Sciences, Part 20. The New Sydenham Society, London, 1892.

Rev. SAMUEL RADCLIFF,—Arcachon: its Advantages as a Health Resort. Thomas Laurie, London, 1893.

Prof. M. CHARLES RICHET,—Physiologie, Vol. 2. Félix Alcan, Éditeur, Paris, 1893.

HENRY SEWILL,—The Dental Profession. Baillière, Tindall, & Cox, London, 1893.

JAMES STARTIN, — A Pharmacopœia for Diseases of the Skin. H. K. Lewis, London, 1892.

J. B. STEPHENSON,—Notes on Medicinal Remedies. Baillière, Tindall, & Cox, 1893.

The Leeward Islands Medical Journal, Vol. 2. J. & A. Churchill, London, 1892.

The Medical Annual and Practitioner's Index. John Wright & Co., Bristol, 1893.

Transactions of the American Gynecological Society, Vol. 17. Philadelphia, 1892.

Transactions of the American Ophthalmological Society. Twenty-Eighth Annual Meeting. Hartford, 1892.

GEORGE R. WILSON, M.B., C.M.,—Drunkenness. Swan Sonnenschein & Co., Lond., 1893.

Part First.

ORIGINAL COMMUNICATIONS.

I.—ON THE SURGICAL TREATMENT OF GALL-STONES.

By JOHN DUNCAN, M.A., M.D., LL.D., F.R.C.S. Ed., Surgeon to the Royal Infirmary, Edinburgh.

(*Read before the Edinburgh Medico-Chirurgical Society, 1st March* 1893.)

I SHALL take as the text for a few observations the last case in which I was called upon to operate for gall-stones.

On 18th October 1892, Mrs O., æt. 53, was transferred by my colleague Dr Wyllie to the wards under my care. Dr Young of Mid-Calder, whose patient she had been, wrote under date 13th October 1892:—"Mrs O. has been subject for twelve years to attacks of pain in the region of the liver, with vomiting, these attacks lasting four or five days. She has been under my care for the last four years, and every three or four weeks she has had attacks as above. About three years ago she had a more severe turn, and then I discovered enlargement of the gall-bladder, and she at that time passed nine or ten gall-stones about the size of small peas with facets. Her present illness dates from nine weeks ago. Jaundice appeared in a few days. She has had remissions of the pain, with reappearance of bile in the stools and lessening of the jaundice. I have never found any enlargement of the gall-bladder at any time during the last attack."

After admission to the Infirmary, we found the exacerbations increasing in number and severity, and the high temperature which accompanied them continuing more and more through the remissions. In the attacks the pain was accompanied by such tenderness that she could not bear the pressure of the bedclothes. The sickness and jaundice were persistent. No tumour could be felt.

I concluded, from a full consideration of all the circumstances, that we had here to deal with a gall-stone impacted in the common duct, that the gall-bladder was of exceedingly small size, and that the whole region was matted together by old adhesions, which specially covered the gall-bladder and its ducts, and bound them to the liver and surrounding organs.

Let me shortly point out the considerations which led me to this somewhat detailed diagnosis.

There was little difficulty in recognising the case as one of gall-stones. The history of repeated attacks of hepatic colic, the former passage of gall-stones, and the presence of jaundice, were sufficient for this. There was only one possible fallacy. I had occasion to see with Dr Brakenridge a gentleman in whom the history of attacks of hepatic colic was very distinct, and where jaundice of two months' duration had succeeded one of them. On the edge of the liver, however, were two nodules of an induration so marked that we thought it right before operating to warn the friends that the operation was of exploratory character, and might be unsuccessful on account of complication with malignant disease. At the operation we found that these nodules were malignant, and as the whole region of the gall-bladder was obscured by old inflammatory adhesions, we simply sewed up the wound in the abdominal parietes, which healed by first intention. It is, in short, certain that malignant disease may resemble gall-stones closely in symptoms, and it is not improbable that gall-stones may occasionally provoke malignant disease, as indeed in any region may long-continued irritation. But, on the other hand, in Mrs O. we had not the slightest trace of that nodulation which is so characteristic a feature of malignant disease of the liver. Moreover, the former passage of gall-stones removed it from the category of cases in which the confusion arises from similarity of symptoms. It was almost certainly, therefore, an example of gall-stones pure and simple.

But, further, the diagnosis was that of a gall-stone impacted in the common duct, as distinguished from the more common variety, in which the stone remains in the gall-bladder or is impacted in the cystic duct. It is necessary, therefore, to appreciate the symptoms which these varieties produce.

Gall-stones may undoubtedly remain in the gall-bladder without producing inconvenience for an indefinite period. Some time or other, however, and usually repeatedly, they give rise to symptoms by obstructing the passage between the bladder and the bowel. It may be that they temporarily obstruct the cystic orifice, it may be that they successfully pass, or it may be that they become fixed in some portion of the route.

Surgically, of course, they do not concern us so long as they remain quiescent, or so long as they are amenable to medical treatment, or may, at least, thereby have the symptoms so mitigated as not to interfere seriously with the comfort of life. But repeated attacks of hepatic colic render life miserable, distention of the gall-bladder may be produced, suppuration may occur, or permanent jaundice may be established. In each and all of these surgical interference is necessary. It is important in such circumstances to determine, so far as may be, the precise position of the stones.

I need not detain you by a description of hepatic colic, a history of which is common to all varieties, but I would remind you that it presents degrees of severity, that it is constantly mistaken for cramp in the stomach, and that sometimes it has unusual features.

I had one patient, for example, in whom the first attack was simply characterized by a slight feeling of indigestion and by wearing pain in the left shoulder, which was mistaken for rheumatism, but which was followed by a week's jaundice. A facetted gall-stone was then found in his stool, and he had subsequent attacks, for which, however, operation has not been required. These points are worthy of all consideration, in view of the general diagnosis; but, surgically, what concerns us is to determine the precise condition of parts when the general diagnosis is made and the question of operation arises.

And, first, as to the cases in which the cystic duct is obstructed.

Plainly one important feature of these cases is that the bile passes on. The stools are coloured, and jaundice does not occur. At least, if jaundice do occur, it is prone to be evanescent, and is due to inflammatory damming back, or to the previous successful passage of a stone.

Another characteristic result is that the gall-bladder becomes enlarged. The obstructing stone necessarily sets up inflammatory action, which may be increased by the presence and movements of other stones in the bladder. The secretion of the mucous lining is increased, and, of course, dammed back, and the tension is at once a farther source of irritation and pain. Other evils with characteristic symptoms may ensue. Suppuration may occur, and, if so, will probably transgress the boundaries of the bladder. A rarer result is rupture.

A woman of middle age was committed to my care by Dr Brakenridge, of whom the following was the history:—After repeated attacks of hepatic colic, a tumour formed in the region of the gall-bladder. One day her little girl, running towards her with outstretched arms, struck the swelling forcibly with her head. This was followed by intense pain, fever, and swelling of the right side of the abdomen. Ultimately an abscess formed, which I opened, and from it removed some fragments of gall-stone. A fistula remained for a time, from which another stone emerged, when it finally closed, and she has since (for two years) remained perfectly well.

But, secondly, the stone may become impacted in the common duct.

In that event the bile is dammed back, and it might be expected that the gall-bladder would in like manner become distended. But bile is secreted under little pressure, and its secretion is therefore quickly arrested. It is possible that the gall-bladder may be somewhat enlarged at first, but presumably because of the arrestment of secretion and re-absorption of what was first formed; possibly also because of the pressure of contracting adhesions, it is often found incapable of holding more than a drachm or two of fluid. Necessarily the arrestment of secretion leads to jaundice, which is profound and persistent.

Early in the case the gall-bladder and its ducts surround themselves with adhesions. These are formed during intermittent attacks of inflammation, which become more frequent and severe as the case progresses. They are accompanied by sickness and vomiting, and by a temperature of the usual inflammatory type. Various organs may thereby be closely bound to the liver and its appendages, notably the stomach and the hepatic flexure of the colon.

In both varieties of obstruction the stone may cause ulceration, and form a fresh passage into the bowel, or give rise to peritonitis. The prognosis is not favourable in either, but all these cases tend to have a long history. It is wonderful, indeed, how even the most profound jaundice and frequent colic may be sustained through long periods.

It was, then, from a knowledge of these facts in the natural history of gall-stones that we came to the conclusion that in Mrs O.'s case we had a gall-stone impacted in the common duct, and resolved to make an effort to remove it.

It may be taken for granted that, if an impacted gall-stone be diagnosed, or if, though unimpacted, it give rise to symptoms which resist medical treatment, surgical interference is requisite and proper. This conclusion is inevitably based on the successful results of operation. Of ten cases I have lost but one, an old man of 72, who was greatly exhausted beforehand, and did not recover from the shock of the operation. Others have been equally or more fortunate. We have only, therefore, to consider the method to be pursued.

Nothing can be more simple and easy than cholecystotomy when the gall-bladder is enlarged and the stone loose or lightly impacted in the cystic duct. Let me take a typical example, which was sent to me by Dr Affleck. A diagnosis of four stones had been made by him. We found five, but one was impacted in the opening of the duct. Such precision can, of course, rarely be attained, but the diagnosis was founded on careful manipulation of the thin and lax abdomen, and was announced beforehand. I incised parallel to the ribs over the tumour. Having found the gall-bladder, I aspirated and then stitched it to the abdominal wall by four sutures arranged in a parallelogram. It was then opened and the stones removed, the impacted one by means of a small scoop.

This is the most common, as it is the simplest variety, and perhaps, on the whole, in such cases the method pursued is the best. It will be found advisable, however, in some to delay the stitching till the opening has been made and the stones removed, because the manipulations in removing an impacted stone may strain the stitches, and are apt to be impeded by the attachment to the abdominal wall. It is well, of course, in the first place to pass in the finger and ascertain from the peritoneal cavity the precise condition of affairs. In any event the aspiration prevents irritating fluid from entering the peritoneum.

The most perfect operation would, of course, be to suture the opening in the gall-bladder and close the abdominal wound. But it undoubtedly involves the risk of the sutures giving way, and the disadvantage of a temporary biliary fistula is so slight that I prefer the safer, if less brilliant plan.

But cholecystotomy is by no means always so simple and easy. One of my early cases—Mrs W.—was one of great difficulty. She had had many attacks of hepatic colic, and at length one of considerable severity was followed by permanent jaundice.

In the mass of adhesions I found the gall-badder with difficulty. I aspirated, opened, and found no gall-stone in it. It barely admitted the first joint of my forefinger. Working my way through the adhesions outside, I felt the stone in the common duct, and, thus directed, was able first to pass a probe, and next a pair of sinus forceps, so far as to touch the stone. I found it impossible to dislodge it by the scoop, and the forceps could not be opened sufficiently even to nibble at it. I made an attempt to crush it from the outside, but was obliged to desist, because it was too hard to crush with the fingers, and from the adhesions I could not get the india-rubber-covered forceps directly applied so as certainly to exclude the bowel from their grasp. With a certain amount of strain, the gall-bladder was attached to the abdominal wall, and the patient made an excellent recovery, with a biliary fistula. My friend Dr Noël Paton made some important investigations on the bile, which were published in the *Edinburgh Medical Journal*. After a time attempts were made to dissolve the stone without success. I also subsequently enlarged the fistula, intending to pierce, nibble at, or corkscrew the stone with certain instruments which I had thought of and prepared. I found that I could not reach the stone through the duct. It had been practically impossible, when she was left to her own management, to keep the fistula aseptic, and as the patient was perfectly well, I did not consider myself justified in opening the peritoneum in the immediate neighbourhood of a septic sinus. She remains yet in complete health, and receives all the bile in an india-rubber bottle. Having an alcoholic tendency, she finds that more convenient than glass. I am inclined to think, from what I found at this second operation, that the common duct is occluded. She once passed a little bile in the stool shortly after the operation, but since that time there has not been a trace of it.

I mention this case because it contrasts with what I have since done in similar cases. It was an early experience.

In Mrs N.'s case, for example, I found as great difficulty in every respect as in that of Mrs W. The gall-bladder could barely be recognised, and I never even tried to explore it, because I could feel that it contained no stone, and that there was one in the common duct. The hepatic flexure of the colon was closely adherent to the anterior part of the duct, especially at the spot where the impacted stone could be felt. Separating gently the colon to a sufficient extent, I steadied the portion of duct containing the stone with my two forefingers, and so rotated it as to enable Mr Hodsdon to make a small longitudinal incision, from which we extracted the calculus. It was found to weigh seven grammes. A small glass drainage-tube was placed in the duct, and another in the peritoneum alongside it, and the external wound was sutured, except at their point of emergence. The wound in the part unoccupied by the tubes healed by first intention; the tubes were removed on the fourth day, and in three weeks the biliary fistula closed. We had a little anxiety for a time, because the buttocks were very severely burned by a hot-water bottle while she was under chloroform. She pulled through the double shock, however, and by skin-grafting, when the slough separated, the burn was made to heal quickly. As in all these cases, the jaundice was slow in disappearing, but bile appeared in the stools on the third day, and in every respect, except for the delay from the burn, the recovery was perfect.

The only point which calls for remark is the treatment of the common duct. As in the case of the gall-bladder, it is evident that the most perfect result would be to stitch up the wound. I have satisfied myself that, although not easy, it can be done with the same contrivances as are required for vesico-vaginal fistula or cleft palate. But the argument against suture of the gall-bladder applies here with yet greater force. You burn your boats. You cannot be sure that the passage into the duodenum is unobstructed by inflammatory adhesion. It would be easy, you may say, to ascertain that with a probe or syringe. But, apart from the fact that the probe would not be conclusive, it seems unwise to pass it into the septic duodenum, while the use of a syringe at that depth, and with the wound we had been obliged to make, could give no information, on account of regurgitation of the fluid. On the other hand, the bile is an aseptic, though not an antiseptic fluid, and effective drainage might safely be trusted to neutralize its chemical irritation. I look upon the plan adopted, therefore, as provisionally the best at our disposal.

The conclusions, then, which I draw from my experience in the surgical treatment of gall-stones are,—

1. That when the stones lie in the gall-bladder or lightly impacted in the cystic duct, cholecystotomy is a safe and easy operation.
2. That if the stone be impacted in the common duct, the gall-bladder is apt to be small, and such structures as the stomach and colon are prone to be adherent in awkward positions.
3. That in such cases it is safe to incise the duct and drain from the wound.

4. That considering the perfect health enjoyed by patients with biliary fistula, there are few cases in which it would be justifiable to form a new route for the bile into the bowel.

II.—THE DISORDERS OF SPEECH.

By JOHN WYLLIE, M.D., F.R.C.P. Ed., one of the Ordinary Physicians to the Royal Infirmary, Edinburgh ; Lecturer on Medicine in the Edinburgh School.

(*Continued from p.* 910.)

APHASIA :—PHYSIOLOGICAL PREFACE ; WITH NOTES UPON THE LEADING FEATURES OF APHASIA, AND UPON THE HISTORY AND LITERATURE OF THE SUBJECT—*Continued.*

Why the Speech Memories or Images are imprinted almost exclusively within the Cortical Centres of only one of the Cerebral Hemispheres.

WHEN Broca, in 1861, published his epoch-making observations upon two cases of Motor Aphasia observed by him in the Bicêtre Hospital, the conclusion that these observations pointed to, viz., that the function of articulate speech is discharged by *one* of the cerebral hemispheres, not by the two acting together, was naturally regarded by the profession with much scepticism. *A priori*, it seemed very improbable that the two anatomically symmetrical halves of the brain should be physiologically so asymmetrical as to have a most important function discharged by one side only. It required the after experience of case after case to convince the profession that the conclusion was really well grounded on fact. Broca himself, almost from the beginning, looked for an explanation of the apparent anomaly. So early as in 1863, he expressed the belief that, in a few rare cases, aphasia would be found to be due to disease of the *right* third frontal convolution. He says,—"The author still hopes that others, more happy than himself, will find at last an example of aphemia produced by a lesion of the right hemisphere. Hitherto it has always been the left third frontal that has been affected. If it were necessary to admit that the two symmetrical halves of the brain have different attributes, it would be a veritable subornation of our convictions in physiology."[1] When, in 1865, he returned to the consideration of this point, cases of aphasia due to lesion of the *right* hemisphere had already been published, and, as compared with the number of cases due to lesion of the left hemisphere, had been found to occur in the proportion of about one to twenty. Broca, in these circumstances, offered the explanation which has since been generally accepted. He pointed out that, for all the finer manipulations, the majority of mankind are right-handed, and therefore left-brained; and he suggested that we are probably left-brained also for the finely coördinated actions of speech. He says,—"Just as we direct the movements of writing, of drawing, of embroidery, etc., with the left hemisphere, so we speak with the left hemisphere." In explanation of the fact that so great a majority of people are right-handed and left-brained, he quotes the statement of Gratiolet, that "in the development of the brain the convolutions of the left hemisphere are in advance of those of the right." Returning once more to the consideration of this subject in 1877, Broca expressed the opinion that the explanation of the earlier development and greater activity of the left hemisphere had been furnished by observations recently made, showing that the left hemisphere has a more abundant supply of blood than the right. Two observers had submitted this question to the test of experimental observation, viz., Professor Armand de Fleury of Bordeaux, and Dr Wm. Ogle of London; and both had found the left internal carotid to be larger than the right in subjects who had been right-handed. Dr Wm. Ogle had further examined three subjects who had been left-handed, and had found that in two of them the carotids of the two sides were of equal size; and that in the third the right common and internal carotids were nearly twice the size of the left.

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[1] *Mémoires d'Anthropologie*, p. 61.

But even if we grant the earlier development of the left hemisphere,[1] and its greater blood supply, it must still be regarded as a very extraordinary thing that of two symmetrical hemispheres one should be so elaborately trained to speech, and the other should, in this matter, be so greatly neglected. It seems the more extraordinary when we consider that the muscular movements necessary for speech are not executed on one side only, like the movements of a trained right hand, but are executed bilaterally. The developmental and vascular differences do not seem sufficient to afford a full and satisfactory explanation. It is even conceivable that the larger blood-supply of the left hemisphere may be rather a consequence than a cause of its greater activity.

An explanation which, to my mind, seems more adequate and satisfactory has been obtained from the study of the laws of Attention. But, as the relations of Attention to the faculty of speech are of the highest importance, I should like to pause here for a short time, in order that I may gather together a few observations about the Faculty of Attention.

Every teacher knows how futile his efforts to instruct are, if the pupil cannot be got to pay attention. In the pupil's mind, if he is not attending, the teacher's words are mere empty sounds—word percepts imperfectly perceived, which he is not taking the trouble to interpret by uniting them to the corresponding idea-percepts. The teacher's voice sounds in his ear like a "tinkling cymbal."

Every student knows that, if his wits are wool-gathering, he may mechanically read a page from beginning to end, and, at the end, have little or no idea of what it is all about. The word-percepts have been passing in procession through his mind, but, the attention being partly absorbed by other matters, have only here and there excited a little feeble ideation. The student must "gather in his wandering thoughts," concentrate his attention, and read the page again.

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[1] It is denied by C. Vogt and Ecker; see Kussmaul, p. 738.

Even among the brute creation, an animal is intelligent and teachable in proportion as it possesses the faculty of attention. Darwin says,—" Hardly any faculty is more important for the intellectual progress of man than attention. Animals clearly manifest this power, as when a cat watches by a hole and prepares to spring on its prey. Wild animals sometimes become so absorbed when thus engaged, that they may be easily approached. Mr Bartlett has given a curious proof how variable this faculty is in monkeys. A man who trains monkeys to act in plays used to purchase common kinds from the Zoological Society at the price of £5 for each; but he offered to give double the price if he might keep three or four of them for a few days in order to select one. When asked how he could possibly learn so soon whether a particular monkey would turn out a good actor, he answered that it all depended upon the power of attention. If, when he was talking and explaining anything to a monkey, its attention was easily distracted, as by a fly on the wall, or other trifling object, the case was hopeless. If he tried by punishment to make an inattentive monkey act, it turned sulky. On the other hand, a monkey which carefully attended to him could always be trained." [1]

The relations of the faculty of attention to Insanity are curious and interesting. Esquirol has treated of the subject with his usual point and lucidity. He mentions three conditions in insanity which interfere with the normal exercise of the attention:—(1), The crowd of fugitive ideas that hurry through the mind when it is in the state of maniacal excitement; (2), the perverted concentration of the attention upon fixed ideas and delusions, in monomania and other forms of delusional insanity; and (3), the enfeeblement of attention, as of the mental powers generally, in dementia. He says that the attention of all the insane is essentially injured by one of these three causes. But " if a strong sensation, agreeable, painful, or unexpected, fixes the attention of the maniac, or diverts the attention of the monomaniac from his delusion; or if a violent commotion awakes the attention of him who is in the state of dementia, immediately the insane patient becomes reasonable, and this return to reason lasts just so long as the effect of the sensation,—that is to say, just so long as the patient retains the power of directing and sustaining the attention."

At the present stage of investigation into the physiology of the brain, it cannot be definitely said in what part of the brain the faculty of Attention specially resides. It has perhaps no special centre. Being, in fact, only the Intelligence *in concentrated activity*, it should perhaps be regarded as a faculty of the cortex as a whole, that is capable of exciting special activities in one centre of the cortex or in another, according to the nature of the sensation, action, or idea that is the subject of its exercise for the time being. There seems to be some ground, however, for the hypothesis that the Frontal Convolutions have special relations to the faculty of attention. This is the conclusion that experimental physiology points to. Ferrier, after giving an account of the observations that have been made upon the point, adds,—"The observations of Hitzig and Goltz appear to me to illustrate and confirm the occurrence of a mental deterioration from lesion of the prefrontal regions, which I have characterized as essentially a defect of attention."[1] Ferrier finds in the frontal lobes the centres for those movements of the head and eyes which occur when the attention is about to be fixed. He says,—"Destruction of the frontal lobes, according to the degree of its completeness, impairs or paralyzes the lateral movements of the head and eyes. Though some ocular movements may be excited reflexly by retinal impressions, there appears to be loss of the power of looking at, or directing the gaze towards, objects which do not fall spontaneously within the field of vision. Correlative with the immobility of the head and eyes, there is the aspect of uninterest and stupidity, the absence of that active curiosity which is normally manifested by monkeys, and the mental degradation which seems to depend on the loss of the faculty of attention, and all that it implies in the sphere of intellectual operations."[2] It remains yet to be seen if clinical observation upon the human subject will fully confirm these conclusions. It may be said, however, that the evidence furnished by the clinical cases of lesion of the frontal lobes already upon record does not seem to be entirely in harmony with them. Some of these cases, indeed, seem entirely opposed to them.[3]

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[1] *The Descent of Man*, p. 73.

Let us now inquire how the exercise of the attention should result, in obedience to the laws of its operation, in the education to speech of one hemisphere only.

We speak figuratively of the *light* of the intelligence or consciousness. When our minds are awake, but in the condition of easy repose, this light may be supposed to be softly diffused in all our faculties. But when our attention is strongly awakened, we become conscious of two things—an increased expenditure, and a concentration of our mental energies. Indeed, the concentration of thought upon one idea may be so marked that the individual may, for the time, become almost oblivious to other matters; and thus it is, no doubt, that so many eminent thinkers have appeared to the public to be "absent-minded." In close thinking, the light is no longer softly diffused; it is gathered or concentrated into a glow in every part of the mind and brain that is actively engaged. If, for example, the mind is engaged in receiving and interpreting impressions coming from without, the light, we may imagine, glows in the cortical receptive centres, as well as in those layers or regions of the cortex, wherever they may be, that are concerned with the higher function of interpreting the meaning of the messages received. Thus brightly illuminated on reaching the cortical centres, impressions from without are promptly received and interpreted. At the same time, they are registered within the gateway; becoming thereby images in the local memory and possessions of the mind, which can be afterwards revived and made use of. They are fixed or burnt in at the first, as afterwards they can be revived and refreshed, by the light and heat of the Attention.

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[1] *The Function of the Brain*, 2nd edition, p. 403.

[2] *Ibid.*, p. 465.

[3] See, for example, the record of the well-known "American Crow-Bar Case" (Bigelow, *American Journal of the Med. Sciences*, July 1850); also Velpeau's case of the loquacious barber, referred to by Bateman, *Aphasia*, 2nd edition, p. 28.

Within each entrance gateway for incoming impressions, there are thus amassed, by this process of educative attention, myriads of sensory images of all kinds. Within each exit or motor gateway, in like manner, there are amassed, by efforts of the attention, the motor memories of finely associated movements. That these various memories of reception and production are linked together into the groups which go to form our primary ideas of objects and of words, we have already seen.

Now, clearly, such an exercise of concentrated attention is particularly necessary for the education of the sensory and motor centres concerned with the reception and production of speech. The sounds of speech that have to be distinguished and registered are particularly delicate and complex; and so also are the muscular acts necessary for its production. If it is sufficient for the purposes of speech that these delicately complex memories of reception and production be impressed upon one side of the brain only, clearly it will be a great saving of nervous energy to train one hemisphere only, rather than to train both. This, in fact, is evidently the explanation of the apparent anomaly that the two symmetrical hemispheres should, in so far as this particular function is concerned, be so markedly asymmetrical in physiological capacity.

It was the late Dr Moxon who first suggested such an explanation. In a short but remarkable paper,[1] published in 1866, he discusses the operation of the attention in the education of the brain to speech, and to other forms of finely coördinated action. Taking piano-playing as one of his illustrations, he points out that it is comparatively easy for a beginner to play in unison on different octaves with the two hands. This seems to require only one attention for the two hands, that attention being directed to the motor centre for the right hand, which in all probability is made not only to innervate the muscles of the right hand, but also to guide the centre for the left hand. To train the centre in the one hemisphere to play the treble, and that in the other to play the bass, is a much more difficult matter. The attention is then not concentrated upon one hemisphere only, it is divided between the two. He compares the tongue to two hands permanently united into one, and suggests that, like the two hands playing in unison, it performs the delicately associated movements of speech in obedience to the centre in one hemisphere only; acting under the guidance of memories of associated movements, which have been stored up within the centre during the process of its education. He says,—"We cannot, perhaps, conceive in what shape these ideas of associated movements persist, but it is quite certain that they do persist, and that in such perfection that, in ordinary speech, the word, or even the part of a sentence to which we are accustomed, comes to the tongue without the attention of the mind to the particular movements required, and often with an appreciably low degree of attention to the word or sentence, as when long strings of sentences are muttered unconsciously by one absent in mind.

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[1] *British and Foreign Medico-Chirurgical Review*, 1866, p. 481.

"Wherever and whatever the local seat of this connexion may be in the brain, it will be seen that if the seat of these ideas of associated movements be destroyed, then the person so injured will be thrown into the condition of a child who has learned to understand speech, but not speak it."

Further light was thrown on this subject by Dr Broadbent, when, in 1872,[1] he formulated his hypothesis regarding the cerebral representations of unilateral and bilateral movements. This hypothesis, in a somewhat modified form, is thus given by Gowers,[2]—"Some muscles of the body, such as the Intercostals and Masseters, are used only with their fellows of the opposite side; others are often used with their fellows, but often also alone, as the zygomatici, the trapezii, and the leg muscles; others are chiefly used alone, as the muscles of the hand. Movements are represented exclusively in the opposite hemisphere in proportion as they are unilateral, in both hemispheres in proportion as they are bilateral. In other words, either hemisphere can excite the bilateral movements, but only the opposite hemisphere can excite the unilateral movements." As the movements of speech are bilateral, they can be excited from either hemisphere.

Broadbent's hypothesis had not long to wait before it received ample confirmation, both from experiment and from clinical observation. Ferrier, in the course of his experiments, observed that "some movements are bilaterally represented in each hemisphere, and are thrown into action conjointly by electrical stimulation of the cortex. This holds good especially of the oro-lingual and trunk movements." Barlow,[1] in 1877, published his interesting and important case of cerebral lesion, first in the left third frontal convolution, and then in the corresponding convolution of the right side. The patient, a boy, was the subject of heart disease, and had first an attack of aphasia due to embolism in the artery supplying the left third frontal convolution. But he speedily regained the power of speech, by training the corresponding *right* third frontal convolution. At a subsequent period, a second embolism plugged the artery of supply of this convolution also, so that the patient again became aphasic; and this time the aphasia was permanent. But not only was there aphasia after the second embolism; there was also true paralysis of the tongue and lips on both sides, as in Glosso-Labio-Laryngeal Paralysis. So long as one of the centres remained sound, these organs were paralyzed only to a very slight extent upon one side, because they are bilaterally represented in the cortex; but their bilateral destruction necessarily resulted in a paralysis of the tongue and lips that was well marked on both sides.

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[1] *Med. Chir. Trans.*, 1872, vol. iv.

[2] *Diseases of the Nervous System*, vol ii. p. 69.

These facts, of great interest in themselves, thoroughly explain the apparent anomaly that, in the complex movements of speech, a store of images amassed on one side only of the brain should be capable of guiding the movements of the articulative muscles on both sides. That one side has alone been efficiently educated is proved, of course, by every case of aphasia. The best explanation of its being so is, I believe, that furnished by the suggestions of Dr Moxon, that in the training of the speech centres it is favourable to the operation of the educating attention, that it should, in the fulfilment of its delicate task, be concentrated upon one hemisphere, rather than divided between two.

The organs of sense that are connected with the reception of incoming speech impressions, viz., those of hearing and of sight, are represented bilaterally in the cerebral cortex, just as are the muscular organs concerned in the production of speech. Thus, each ear, and each eye, is connected with both hemispheres; and each hemisphere is therefore connected with both eyes, and both ears. Destruction of the cortical centre for hearing or vision in one of the hemispheres, will, therefore, not make the patient deaf or blind in one ear or eye;[2] and, on the other hand, total deafness or blindness on one side, from disease of the ear or eye, will not cut off either of the hemispheres from the reception of impressions coming from the remaining ear or eye. But, nevertheless, in regard to speech, the education of the auditory and visual centres is unilateral. In the auditory and visual centres of one hemisphere only are the sense-impressions of speech, audible and visible, carefully noted by the attention, registered, and amassed; and the hemisphere selected is always the same as that for the motor centres of oral articulation and of writing. It is the left hemisphere in right-handed people, the right in left-handed people.

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[1] *British Medical Journal*, 1877.

[2] To be more exact, it may be said—(1), that destruction of the cortical centre on one side often causes temporary deafness in the opposite ear, but this passes off as the impressions from the deaf ear are more and more easily conveyed to the cortical centre of the same side along pathways previously not much used; and (2), that destruction of the cortical centre for vision on one side causes, not blindness of the opposite eye, but blindness in the opposite half of the field of vision in *both* eyes (Homonymous Hemianopsia), and this is usually permanent.

Dr Moxon seems to have been the first to suggest clearly the probable relations of the auditory and visual centres in the cerebral cortex to incoming speech and its memories or images. In the paper of 1866, from which I have just quoted, there occur the following sentences:—"The resolution of the power of language into incoming and outgoing language is a very striking fact, and its bearing upon the inquiry as to the site of the faculties of speaking and understanding the speech of others is, I think, very important, when we notice the significant circumstance that (in ordinary cases of hemiplegia of the right side with motor aphasia) the power of motor language disappears with power of motion, whilst the power of sensory language remains with the power of sensation. . . . Does not this indicate that the memory of movements, combined for words, lies in anatomical connexion with the centres which give motion to the tongue, etc., whilst the memories of sounds and sights, combined for words, lies in anatomical connexion with the centres of the nerves of the eye and ear? or, in other words, that the situation of the ideas of *associated motions* which form the faculties of speech is supra-motory, whilst the situation of the ideas of *associated sensations*, which form the faculty of word comprehension, is supra-sensory."

Considering the date at which these sentences were written, I think them very remarkable; they state so clearly the true relationships of speech, not only to the motor centres, but also to the sensory or receptive centres. The very terms "supra-motory" and "supra-sensory" will recall to mind the terms "psycho-motor" and "psycho-sensory" at present used by some of the French authors. The terms seem to indicate that, in the author's opinion, the speech memories or images are registered, not outside of, but within the gateways of the consciousness. But Dr Moxon was not so fortunate as to verify his hypothesis regarding the relationships of the speech memories to the sensory centres, by the observation and record of actual cases. The great service to science of recording actual cases of sensory aphasia, and of pointing out clearly the distinctions between sensory and motor aphasia, was reserved for others, and more especially for Wernicke.

(*To be continued.*)

III.—STUDIES IN FŒTAL PATHOLOGY AND TERATOLOGY.

(SECOND SERIES.)

II. ALLANTOIDO-ANGIOPAGOUS TWINS—PARACEPHALUS DIPUS CARDIACUS.

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(Read before the Obstetrical Society of Edinburgh, 8th February 1893.)

HAVING in a previous communication given an account of the appearances found in an allantoido-angiopagous twin of the paracephalic variety, I may now proceed to gather together the details of similar specimens that have from time to time been recorded by other observers. In this way some light may be expected to be thrown upon the general characters of these deformed fœtuses and upon their mode of origin.

THE PARACEPHALOUS TWIN.

Definition.—As has already been stated, Taruffi has arranged together in one group all those allantoido-angiopagous twins that are in possession of a head, and has given to them the name "paracephali." The word is not a new one, but the sense in which it is employed is novel. Geoffroy Saint-Hilaire originally suggested the term "paracephalus" for one of the groups into which he subdivided the single monsters of the order of the omphalosites. He stated that the four leading characteristics of the paracephalian fœtus were as follow:—(1), The marked deviation of the whole body from its normal symmetry; (2), the imperfect state of the limbs, as to their form and proportions, or as to the number of digits; (3), the absence of many of the thoracic and abdominal viscera; and (4), the existence of a head, very imperfectly formed, but recognisable as such on external inspection. The paracephalian fœtuses of Saint-Hilaire's classification were not recognised by Förster as a separate group, but were placed by him among the acephali under the designation of *acephalus paracephalus.* Ahlfeld, again, grouped the paracephali in a subordinate position among the acardiaci, and gave to them the name *acardiaci ancipites.* In their attempt to arrange Saint-Hilaire's paracephalians according to the German classification, founded upon Elben's investigations, Förster and Ahlfeld introduced some degree of confusion into the whole subject. From the mode of arrangement adopted by these two teratologists it would have been difficult for them to have framed definitions at all in accordance with the names given to the monsters, for Förster would have been compelled to have admitted that his headless fœtuses had in this group a head, and Ahlfeld would have had to state that his head-bearing heartless fœtuses sometimes had a heart. Ahlfeld, indeed, recognised that these monsters were always born along with normal twins, and that they were united with them through their allantoidal vessels—that they were, in fact, allantoic or placental parasites; but he did not fully realize the importance of this fact from the point of view of their classification. Taruffi was the first to recognise the great importance and interest of this group of terata, and to see that it was necessary to remodel the existing systems of classification and nomenclature in order to bring them into conformity with recent teratological discoveries and advances. Ahlfeld had placed them with the double monsters and amongst the allantoic parasites, and thus far Taruffi followed his example; but the latter writer also saw that it was paradoxical to put them with the acardiaci, and that it was necessary to place them in a group by themselves. Not wishing to coin a new name, Taruffi took Saint-Hilaire's original term "paracephalus," and slightly modified its meaning to suit the requirements of the case. He recognised that the common character of this group of omphalo-angiopagi was the presence of a head, and that this head was not always very imperfect, but might be nearly, if not quite, normal. He further found a place among the paracephali for the acormic monsters of Förster's classification. He therefore used Saint-Hilaire's term in a corrected and extended sense, and was able to frame the following definition :—*A paracephalic fœtus is an omphalo-angiopagous twin which has the head (cranium or face) and the limbs more or less defective, and which sometimes has in addition to the absence of the lower limbs that also of the trunk.* I accept this definition, but substitute *allantoido*-angiopagous for *omphalo*-angiopagous.

Varieties.—Saint-Hilaire arranged the members of the family of the paracephalians in three genera: the first genus he called paracephalus, the second omacephalus, and the third hemiacephalus. Paracephalus he defined as an omphalosite with a defective yet large head, with a distinct face and mouth, with rudimentary sense organs, and with the upper limbs; the distinguishing character of the members of the second group was the absence of the upper limbs; and whilst the fœtuses in the third genus had arms, they had for a head only a shapeless mass, with some appendages or cutaneous folds in front. Taruffi, having the advantage of acquaintance with a much larger number of specimens than Saint-Hilaire, was able to construct a more correct and exhaustive scheme of classification. He adopted as a primary means of arrangement the state of the lower limbs and trunk, and thus obtained three chief groups, called—(1), *Paracephalus dipus*, in which both legs were present; (2), *P. apus*, in which there were no legs; and *P. pseudo-acormus*, in which the lower limbs were absent and the trunk very rudimentary. He regarded as a secondary character the presence or absence of the heart, and subdivided the variety paracephalus dipus into *cardiacus* (with a heart), and *acardiacus* (without a heart). It is doubtful whether Taruffi's classification will be found capable of including all the possible varieties of the paracephalic twin. Thus it scarcely provides a place for such a specimen as that lately described by me; that fœtus ought, in strict accuracy, to be placed between the dipus and the pseudo-acormus varieties, for whilst both lower limbs were present, there was practically no trunk. This objection might, however, be raised with regard to any scheme of classification, for all such must be to a great degree artificial; one form of monstrosity passes insensibly into another, and is not sharply defined. It would seem, however, that there might conveniently be established a variety to include fœtuses with one lower limb, *paracephalus monopus.*

GROUP I.—PARACEPHALUS DIPUS.

About sixty specimens belonging to this group have been described by various writers, and of these the greater number were acardiac. The following definition has been proposed by Taruffi for the members of this group: they are "*twins, one of which is, it is true, furnished with a head, trunk, and lower limbs; but these parts are more or less defective, to say nothing of the upper limbs, which may even be absent.*" It will be convenient first to consider the fœtuses of this group which are provided with a heart, and thereafter those that are acardiac.

SUB-GROUP I.—PARACEPHALUS DIPUS CARDIACUS.

Historical Notes.—It would seem that very few specimens of this form of monstrosity have ever been put on record, for I have only been able to find about twelve instances in which the evidence seemed sufficient for purposes of identification; but several other cases have been noted, in which, although some of the necessary details were absent, there appeared to be every probability that they were also paracephali with a heart. Possibly some observations of anencephalic fœtuses born along with normal twins should find their place in this group, *e.g.*, the case[1] reported for Dr Paterson by Professor A. R. Simpson to this Society in March 1877; but in the absence of details concerning the placenta, such observations must be neglected.

The specimen somewhat imperfectly reported by Jaenis in 1673 seems to have been the first of this variety of monster ever recorded. Nearly a hundred years passed before Roederer noted another; his description extended to nearly eighty pages, and was a masterpiece of accurate and minute dissection. In the present century Uccelli, Vrolik, Tamm, Brandau, Orth, Santi Serena, Horder, Martin, Jaggard, and Page have all recorded, in a more or less complete way, deformed twins of this kind, and Metzner observed a case of triplets, one of which was a heart-bearing paracephalus. Specimens which in all probability also belonged to this group were those put on record by Poppel, Nieberding, Brown, and Smith and Birmingham.

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[1] *Edinburgh Medical Journal*, vol. xxii., 1877, p. 1130.

Synonyms.—The authors who described fœtuses belonging to this group gave to them very various names. Jaenis entitled his communication "De Infante sine Capite," Roederer called his "Fœtus Parasitici Descriptio," Metzner used the phrase "De insigni quodam partu trigemino," and Vrolik that of "Beschryving eeniger merkwardige Missgeborten." Other writers described their specimens as "acardiaci." Brown called his "A peculiar Acephalous Monster," Jaggard noted "A Case of Fœtal Aplasia," and Page described his example as a "Mylacephalous Acardiac Twin."[1] Tamm, Nieberding, and Smith and Birmingham paid special attention to the marked condition of anasarca present in their specimens, and named them accordingly. In no single instance was the term "paracephalus" employed by the original observer. No uniform nomenclature was adopted, and most of the writers showed by their expressions the difficulty they had experienced in finding suitable names for their specimens. Ahlfeld's term "Acardiacus anceps" must be regarded as synonymous with "paracephalus dipus cardiacus."

CLINICAL DETAILS.

In many of the recorded cases the circumstances connected with the birth of paracephalic fœtuses of this variety are very imperfectly stated, and in some instances no clinical details at all are reported. In all the cases the pregnancy which ended in the birth of a deformed fœtus was plural; in sixteen instances it was twins, and in one (No. 4) it was triplets.

Maternal History.—The previous general health of the mother was not often touched upon by writers; but in Nos. 7, 13, and 15 it was said to have been good, and in No. 17 it was noted that there was no history of syphilis. The mother's age was only occasionally given: it was 24 in No. 4, 26 in No. 7, 27 in No. 1, 35 in No. 17, and 37 in No. 12. She was multiparous in most of the cases in which her condition as regards parity was noted: she was a ii.-para in No. 4; a iii.-para in Nos. 1, 2, and 5; a iv.-para in No. 7; a v.-para in Nos. 6 and 14; a x.-para in No. 17; and a "multipara" in No. 16. She was, however, a i.-para in No. 12. The previous obstetric record was frequently a bad one: in No. 1 there had been first an abortion at the third month and then a well-formed living male infant; in No. 2 the first child, a female, was an imbecile, and the second, also a female, was affected in the same way; in No. 7 the mother had had, by her first husband, four well-formed children, she remained a widow for seven years, she then re-married, and gave birth to a paracephalic fœtus; in No. 7 there had been previously two healthy full-time infants and one abortion; and in Nos. 4, 14, and 17 the earlier labours had been normal. In no instance is there any history of a previous plural gestation.

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[1] Doran, however, in the discussion that followed the reading of Page's paper, maintained that the monster was an "Acardiacus Paracephalus."

The pregnancy which resulted in the birth of a paracephalic fœtus was, as has been said, always plural—at least this is inferred, if not absolutely stated; and it often came to a premature conclusion. Labour occurred at the twentieth week in No. 15; at the sixth month in Nos. 4 and 13; at the seventh month in Nos. 7, 14, and 16; at the eighth month in No. 6; and at the full term in No. 17.

The pregnancy was complicated by hydramnios in Nos. 13 and 16, and in the latter it was noted that there was severe vomiting in the early, and great dyspnœa in the later, months. The normal twin was nearly always the first born; it was distinctly stated to have been so in Nos. 5, 6, 7, 12, 14, and 17, but in No. 16 it would appear, although the statement is not quite clear, that the monster was first expelled. In No. 4 (triplets) the deformed fœtus was preceded and followed by normal infants. Further details of the confinement were in some cases given: in No. 5 the normal infant presented by the vertex, whilst the monster came as a footling, and was delivered along with the placenta without interference; in No. 6 the deformed fœtus was born five hours after the normal one; in No. 7 the well-formed twin presented by the shoulder, whilst the monstrous one came as a footling; in No. 12 the healthy infant was delivered after two days' labour-pains, the paracephalus came away soon afterwards, and there was considerable hæmorrhage; in No. 14 the monster presented by the breech; in No. 16 forceps and digital traction were required to deliver the malformed infant; and in No. 17 both fœtuses presented by the head. The puerperium was probably always normal; it was distinctly stated in Nos. 4, 12, and 16 that the mother made a good recovery.

Paternal History.—The health of the father was in only a few cases referred to; it was said to be good in Nos. 13 and 17. The fact that in No. 6 the children by the first husband were normal, while those by the second were allantoido-angiopagous twins, is perhaps of some importance as suggesting the possibility of paternal influence.

Infantile History.—In all the cases the deformed twin was necessarily dead-born, but in no instance is there a record of advanced maceration. Probably death took place at the time when the cord of the normal twin was tied. The well-formed twin was dead-born in Nos. 2, 7, and 13; and it died soon after birth in Nos. 14 and 16. In Nos. 12 and 17 the co-twin was living when born, and probably survived. The twins were of the same sex in all cases, with one doubtful exception (No. 6); they were both males in Nos. 1, 3, 8, 9, 12, 14, 15, and 17, and they were both females in Nos. 2, 5, 7, 10, 13, and 16. In No. 4 the three fœtuses were females: the first born had a tumefied abdomen, and lived twenty minutes, whilst the last born lived an hour and a half.

MORBID ANATOMY.

I. OF THE FŒTUS.

a. General External Appearances and Measurements.—In all the recorded cases the paracephalic cardiac fœtus was markedly monstrous in appearance, as a reference to the drawings given by Jaenis, Roederer, Metzner, Tamm, Smith and Birmingham, Jaggard and Page will demonstrate. The deformity was in great measure due to the advanced anasarcous state of the subcutaneous tissue, especially in the region of the head and neck, but it was also caused in some instances by the exceedingly rudimentary condition of the cephalic extremity of the fœtus. The paracephalous twin varied greatly in length: it measured 25 cms. in No. 12; 27 cms. in Nos. 6 and 9; about 30 cms. in No. 1; 33 cms. in No. 7; 37 cms. in No. 17; and 38 cms. in Nos. 2 and 16. Its weight also varied greatly: it was 3 lbs. in No. 2; about 1300 grammes in No. 17; 8 lbs. in No. 7; 3600 grammes in No. 12; and 10 lbs. in No. 16. It was smaller than the normal twin in No. 2, but larger in Nos. 13, 14, 15, and 16. In No. 4 the first born and normal fœtus measured 24·5 cms.; the second (monstrous) one measured 18·5 cms.; and the last born (normal) one 27 cms. In Jaggard's case the normal infant weighed 4½ lbs., and the monster 10 lbs; and in Smith and Birmingham's case the paracephalous infant was three times as large as the well-formed one. The large size of the malformed fœtus was chiefly to be ascribed to the anasarca, for the skeleton was usually small.

b. State of the Subcutaneous Cellular Tissue.—Nearly all the writers who have put on record specimens of this variety of paracephalus were struck with the markedly œdematous state of the subcutaneous cellular tissue. Sometimes the œdema was described as gelatinous in character (Nos. 2, 7, and 15), sometimes as serous (Nos. 3, 6, 9, 12, and 16). It was generally universal, but in No. 7 it did not affect the lower limbs. Some authors noted that beneath the skin were true cystic cavities. There were such cysts on the back of the neck in Nos. 2 and 4, on the head in Nos. 6 and 7, and all over the body in No. 9. The subcutaneous tissue was described as fatty by Poppel (No. 5).

c. State of the Head.—The degree of deformity of the head varied in different specimens; in some there was scarcely any malformation (No. 8), and in others there was only a shapeless mass representing the cephalic extremity (Nos. 1, 6, 14, and 17). The specimen described by Jaenis (No. 1) showed no face; but the writer thought that he recognised in some irregular projections on the nape of the neck the rudiments of a mouth, eye, and tongue. He concluded that the face looked backwards, but no doubt what he looked upon as features were simply irregular cutaneous folds.

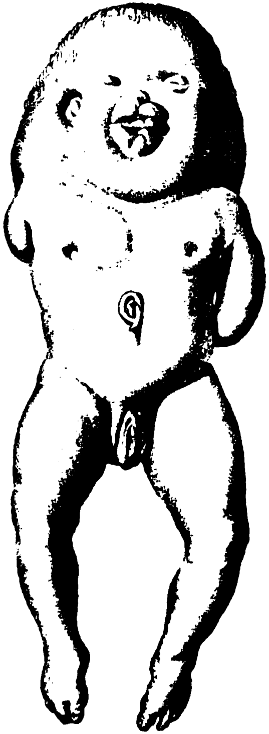

Fig. 1.
Roederer's Paracephalic Fœtus.

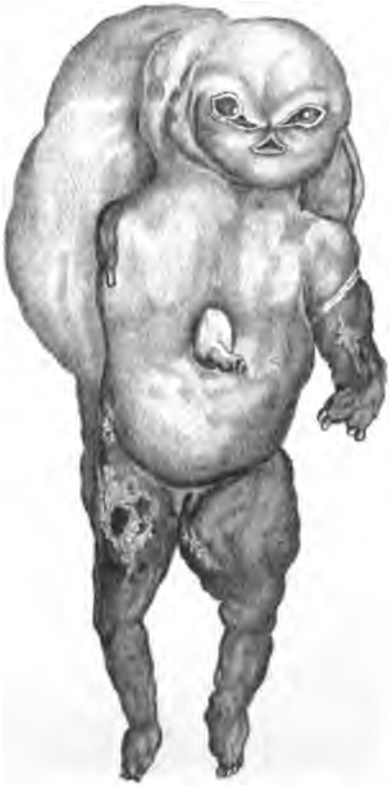

Fig. 2.
Metzner's Paracephalic Fœtus.

There was no cranial cavity and no brain. Roederer (No. 2) gave a very complete description of the head in his specimen. In addition to the deformity caused by the serous cysts in the neck there was a fissure of the upper lip on the left side, the eyelids were somewhat deformed, the nares were closed anteriorly, there was only a vestige of the external auditory meatus, and the membrana tympani was absent. A large quantity of fluid was found in the cranial cavity, along with a certain amount of brain substance (internal hydrocephalus), and hairs were present on the vertex. There were various malformations of the bones of the head, and the vomer was absent. In No. 3 the bones of the cranial vault and upper part of the face were absent; the alveolar border of the upper maxillæ and the lower jaw, which was anchylosed to the glenoid cavity of the temporal, were present; in the middle line was a small transverse slit, with a tongue and a rudimentary lip, leading into a blind buccal cavity; at the sides were two small rudiments of ears; and the brain, like that of a fish, consisted of a small tubercle. The cerebral membranes formed a sac containing serum. Metzner's fœtus (No. 4) showed a membranous cranial vault containing a few vestiges of bone; the brain was semi-fluid; there was corneal staphyloma; and there was a median hare-lip, and atresia of the nasal cavities posteriorly, along with absence of the anterior nares. The buccal and cranial cavities communicated through a fissure in the body of the sphenoid. In No. 5 there was muddy fluid in the cranium; and a bean-sized brain-rudiment, containing ganglion cells and fat crystals, lay on the basis cranii. Vrolik (No. 6) gave a very complete description of the head in his specimen. It was a shapeless mass with some indications of a face anteriorly (mouth, lips, flattened nose, imperfect eyelids, and shapeless ears); there was a cystic cavity containing serum on the vertex; within the cranium was a sac containing fluid, whilst below it was the rudiment of a cerebrum and a normal cerebellum and medulla oblongata; in each of the orbits was a vascular pigmented membrane like the choroid; there was a cartilaginous auditory meatus on the left side, but none on the right; there were traces of the pituitary gland and of the 5th, 7th, 8th, and 10th pairs of cranial nerves; the nasal processes of the frontal bone were widely separated by a membranous space, and the nasal seem to communicate with the cranial cavity; the nasal bones, the ethmoid, and the zygomatic processes of the malars were absent; the right temporal had no zygoma and no annulus tympanicus, but these were present in the left; the pharynx and larynx ended blindly; there was partial anchylosis of the lower jaw; and the upper part of the cranium was in great part membranous. In Tamm's specimen (No. 7) the head was like that of an eagle-owl, the right half was larger than the left, there was a meningocele at the root of the nose, and there was both internal and external hydrocephalus. In No. 9 there were cystic tumours on the head; the cranial cavity, which had previously been opened, contained only a pulpy mass of connective tissue in which no nerve elements were found; and there was on the left side of the head a thick œdematous skin-sac reaching as low as the elbow, and giving an asymmetrical appearance to the cephalic end of the monster. In Santi Serena's case the head was small, and was surmounted by a little soft tumour; the ears were rudimentary, the eyes small, and the nose flattened; the lip had a double fissure extending into the palate; the lower jaw was small; the oral cavity ended blindly posteriorly; the cranial cavity was very small, had thin walls, and an aperture at the level of the sagittal suture, and it was filled with loose vascular connective tissue continuous with the small tumour on the vertex of the head; there was no ethmoid, the optic nerves were absent, and the optic foramina were scarcely marked. In No. 11 the head was hemicephalic, and the eyes atrophic. In No. 12 the head was a shapeless mass, and in No. 13 it was greatly deformed by œdema. The cranium in Brown's case (No. 14) was small (size of a walnut), was covered with skin bearing a few stunted hairs, and contained some brain tissue. In No. 15 the head and face were greatly deformed by the anasarcous state of the subcutaneous tissue. Jaggard's specimen (No. 16) had a bullet-shaped head; the ears were rudimentary (the right one had no meatus); the palate and both the superior maxillæ were cleft; the tongue was rudimentary; imperfect eyelids marked the position of the eyes, while that of the nose was indicated by a double fissure; inside the cranium the meninges were firmly matted together and had a thin layer of brain substance attached to them; the cavity was filled with cerebro-spinal fluid; the basal ganglia were very small; and there were no olfactory or optic nerves. Finally, in Page's specimen (No. 17) the cephalic extremity consisted in a soft globular mass rigidly fixed in a direct line with the trunk; there was no trace of a mouth; there was a small conical protuberance, like an ear, to the left of the middle line,—this was found to be the nose; there was above this a slit suggesting a rudimentary palpebral fissure; above it was a small circular foramen like a defective membrana tympani, and there was a similar smaller one on the opposite side; the cephalic end contained dark straw-coloured serum, with a sp. gr. of 1027, an alkaline reaction, and with 4·3 per cent. of serum albumen; the only portion of bone present was the palatine process of the superior maxilla; there were no traces of teeth, orbits, internal ears, or brain substance; and behind the superior maxilla was an ovoid cavity, probably an expansion of the spinal foramen of the 5th cervical vertebra.

d. State of the Vertebral Column.—In many cases (Nos. 1, 4, 5, 11, 14, and 15) there were no details given of the spine, and in some others (Nos. 2, 7, 12, and 13) it was probably normal. In No. 3 there were no cervical vertebræ, and the occiput articulated with the first dorsal vertebra; there was spina bifida, and the spinal cord was relatively large, and had a normal consistence. In Vrolik's specimen (No. 6) some of the cervical and some of the dorsal vertebræ had their spinous processes united; the lumbar part was normal, but the sacrum turned backwards, producing an imperfect state of the posterior pelvic wall. In No. 10 there was dorso-cervical kyphosis. In No. 16 a tumour filled with cerebro-spinal fluid occupied the right side of the thorax and abdomen, and was continuous with the membranes of the spinal cord by a pedicle passing between the seventh cervical and the first dorsal vertebra. Page's specimen (No. 17) had a curve with concavity forwards in the cervical region, and a distinct angular curvature with slight lateral deviation in the dorsal part; the first four cervical vertebræ were absent, but the cord was present.

e. State of the Upper Limbs.—In some of the specimens (Nos. 6, 8, 14, and 17) there were no traces of upper extremities, in others they were normal save for the œdema (Nos. 13 and 15), and in others they were present in a more or less deformed state. In No. 1 the right arm was much longer than the left; in No. 2 the right was represented by a short tuberosity, and the left was turned backwards and ended in a tubercle; in No. 4 the left arm was very short, and was marked by a groove caused by the umbilical cord, and the right was represented by a rudimentary digit; in No. 7 there was no trace of arm or hand on the right side, and on the left was a claw-like rudiment of a hand with two fingers; in No. 9 the arms were short and the fingers scarcely recognisable; in Santi Serena's case (No. 10) the right arm was a small prolongation ending in two small lobes, while the left was complete, but concealed in great part by the skin of the thorax; in No. 11 the arms were well developed, but the hands were defective; in Martin's specimen (No. 12) there were mere traces of the arms,—on the right side were two normally formed nail-bearing fingers, and one such on the left; and in No. 16 the right arm possessed only a radius and an ulna, and was united to the side of the abdomen, while the left arm was adherent to the thorax as far as the elbow, and the hand was clubbed with a rudimentary thumb and two rudimentary fingers.

f. State of Thorax and its Viscera.—In all the specimens there was some trace of a heart. In Nos. 7 and 15 the heart was normal, or nearly so; and in No. 13 it was hypertrophied, especially on the left side, and showed premature closure of the ductus arteriosus. It was also normal, so far as can be made out, in No. 1; but in all the other cases it was more or less defective. In No. 2 it was formed by the sinus of the vena cava, which opened into a single muscular ventricle, which had no communication with aorta or pulmonary vessels. In No. 3 the heart was rounded; there was one ventricle, from which arose the aorta, and one auricle, which was really nothing more than a sinus on the large vein continuous with the umbilical vein. In No. 4 the umbilical vein passed direct to the heart, which did not give origin to the aorta. In this case also the heart was much smaller than in the two accompanying normal fœtuses. Poppel was unable to make a complete dissection of his specimen, so the presence of a heart in it must remain doubtful. In No. 6 there was a large heart, consisting of a venous sinus and a ventricle; the right and left jugular veins opened into the former, and from the latter arose the aorta. In No. 8 there was a heart with two ventricles; and in No. 9 it had two cavities,—the left had small muscular trabeculæ and thin walls, whilst the right had thicker walls; there were no valves, and the heart was not in relation with the great vessels, but from the upper end of the left cavity arose a small vessel which passed upwards, whilst at the lower end a similar vessel entered the heart at the spot where the two cavities opened into one another. In No. 10 the heart had a single ventricle (the left), which communicated with its auricle and with the aorta; into the auricle opened the two venæ cavæ. In No. 11 the heart gave off one vessel and one entered it, whilst in No. 12 it was a thin-walled sac with trabeculæ on walls and greasy contents. In No. 14 the heart consisted of two cavities, and was developed to the degree seen at the second month of fœtal life. In No. 16 the auricles were well developed and communicated freely; the right ventricle was greatly hypertrophied, and the left, which was rudimentary, opened into it; and in No. 17 it was rudimentary and single chambered,—there were no valves, and the only vessels were an archless aorta and an inferior vena cava.

A diaphragm was present in Nos. 1, 2, 3, 5, 7, 10, 12, 13, and 15; but absent or imperfect in Nos. 4, 6, and 17, and probably also in Nos. 8 and 9. The thymus gland was stated to be absent in Nos. 4 and 16; it was present in Nos. 2, 3, and 7, and details concerning it are wanting in the other cases. There were no lungs in Nos. 2, 3, 4, 10, 12, 14, 16, and 17; the left was small and the right absent in No. 7; and both were small or rudimentary in Nos. 1 and 11. It was definitely stated that the œsophagus was absent in Nos. 2, 3, and 6; it was probably so in many other cases; and it ended blindly in No. 7. There was no trachea in Nos. 3, 6, and 16; it ended blindly in No. 7; it was probably wanting in several other instances; it was well developed, however, in No. 11. The thoracic cavity contained fatty or œdematous cellular tissue in Nos. 2, 5, 6, 9, and 12, and fluid in Nos. 7 and 13. A sternum was absent in Nos. 5, 6, 9, and 10; it was bifid in Nos. 2 and 4; and it was probably defective in other instances. The ribs were slightly defective or imperfect in Nos. 2, 10, and 17; in No. 6 there were only four on the right and six on the left side. The clavicles were twisted abnormally in No. 3; they were absent in No. 10. The thoracic duct was absent in No. 15, and the thyroid gland in No. 16.

g. State of Abdomen and its Viscera.—In the case of the abdomen, as in that of the thorax, paracephalic fœtuses presented extraordinary abnormalities. In some cases, on account of the absence of the diaphragm, the abdominal and thoracic cavities communicated freely (*e.g.*, in No. 6); and in nearly all the recorded instances the viscera were markedly defective. The liver was described as small in Nos. 9 and 10, and it was absent altogether in Nos. 2, 3, 4, 5, 12, 14, 16, and 17; it was present and of large size in No. 1. The spleen was small in size in Nos. 7 and 12, and altogether wanting in Nos. 1, 2, 3, 5, 14, 16, and 17; it was probably present in Nos. 13 and 15. There was a stomach, but an imperfect one, in Nos. 10 and 14; there was none in Nos. 1, 2, 3, 5, 12, and 16; and it may be concluded that this organ was fairly normal in Nos. 7, 9, and 17. The absence of the pancreas was noted in Nos. 2, 3, 9, 16, and 17. The intestines usually formed some imperfect coils, terminating blindly at one or both ends, and having a shortened mesentery. This was their general condition in Nos. 1, 2, 3, 5, 6, 9, 10, 12, 14, 16, and 17. In No. 3 there was a small, and in No. 4 a large, umbilical hernia. The intestines were narrow, and contained much fluid in No. 7; they were described as adherent to each other in No. 12; and there were no mesenteric glands to be seen in No. 15. The condition of the kidneys varied somewhat: both organs were present in Nos. 2, 5, 6, 7, 9, 10, 12, 13, and 16; one was absent in Nos. 1, 3, and 17; and although both were represented in No. 14, one was very rudimentary. Both ureters were reported as present in Nos. 2, 4, 7, 9, 10, and 16; one was absent in No. 3, and both were wanting in Nos. 5 and 6. The bladder was stated to be present in Nos. 2, 3, 4, 6, 9, 10, 12, 13, and 17; but it was described as small, with thick walls in three of these (Nos. 3, 9, and 12). In No. 16 there was no proper bladder cavity, for the ureters opened along with the intestine into a cloaca in the position of the vagina. The urethra was stated to be absent in No. 6; it was present, but imperforate, in Nos. 9 and 10; and it was described as pervious in Nos. 7 and 13. The uterus was absent in Nos. 10 and 16; its presence was noted in No. 2. The ovaries were absent in No. 16; they were in a primitive state of development in No. 10, and their presence was recorded in No. 2. In No. 4 the sexual organs were normal. It is possible that the structures described by Vrolik (No. 6) as testicles may have really been ovaries, for the other twin was a female; and in the deformed one the external genitals were entirely absent. If this explanation be not accepted, it must be admitted that this case offers the solitary exception to the general rule that such twins are always of the same sex. In Nos. 3, 9, and 12 the testicles were present, and in each of these cases their position was intra-abdominal; they were absent in No. 17. Finally, the presence of fluid in the abdomen was noted in Nos. 2, 7, and 13.

h. State of External Genitals and Anus.—The external genitals were those of the male in Nos. 1, 8, and 14, and in them the testicles were probably present in the scrotum. In Nos. 3, 9, 12, 17, and probably 15, whilst the penis was present, the testicles were absent from the scrotum. The female external genital organs were present in Nos. 2, 4, 5, 7, 10, 13, and 16. In No. 6 there were no external genitals at all. The anus was described as pervious in Nos. 2, 3, 10, and 17; but it was imperforate in Nos. 6, 9, 12, 14, and 16.

i. State of the Lower Limbs.—The lower extremities were normal in Nos. 1 and 3, and in Nos. 13 and 15 they were œdematous. They were defective, but only as to the number of the toes, in Nos. 2, 4, 7, 9, and 11. The thighs were well developed, but the legs were atrophic in No. 10. In Nos. 12, 16, and 17 the toes were also defective and the feet were clubbed (equino-varus in No. 12, calcaneo-varus in No. 17), and there was no proper knee- or ankle-joint in No. 12. In No. 6 the trunk passed into a thick thigh, in which, however, two femora could be felt and two knees could be recognised; the legs were placed in the form of a cross, and were united by membrane; the fibula was defective in the left leg; and the right foot had four toes, of which one was bifid, whilst the left had only one.

II. OF THE PLACENTA, MEMBRANES, AND CORD.

The condition of the fœtal annexa is of great interest in the case of the paracephalic twin fœtus, and it is matter for regret that in several of the recorded examples (Nos. 1, 2, 6, 9, 11, and 15) information on this matter is not forthcoming. It is probable, however (if I may be allowed to judge from the other conditions found), that in these instances, as well as in Nos. 3, 5, 7, 12, 13 16, and 17, the placenta was single. A solitary exception to this rule is found in No. 14; but in this case it is stated that whilst the placenta of the normal twin was larger than normal, and had a cauliflowered edge, that of the monster was about the size and shape of a normal adult kidney, so that it is very probable that here also there was at least a vascular connexion between the two after-births. In Nos. 3, 5, 13, and 17 it is stated that there were two distinct amniotic sacs, and it is very likely that this was the case in most of the other examples, although the fact is not recorded. In No. 4 the placenta was biscuit-shaped; its smaller part nourished the last-born (normal) fœtus, which lay in a separate chorionic sac and had one umbilical cord; its larger portion had attached to it two cords, one passing to the first-born (normal) fœtus, the other to the monster; these two cords were united by a communicating branch, and the two fœtuses lay in a single chorionic cavity. The liquor amnii was excessive in amount in the sac containing the malformed twin in No. 13; but there was no fluid at all in it in No. 14, so that the membrane was in places adherent to the fœtus.

The relations of the umbilical cords were very interesting. In No. 2 the cord of the monster contained two veins, one of which passed upwards on the left side to furnish the subclavian, jugular, and thyroid veins, whilst the other (the smaller) opened into the inferior vena cava. In No. 3 the cord of the normal twin arose from the margin of the placenta, and from it took origin that of the malformed fœtus, the umbilical vein passing direct to the auricle. In No. 5 the cord of the living twin contained two arteries and one vein; one of the arteries divided into two branches, one of which passed to the placenta, whilst the other went to help to form the cord of the monster; the other artery was normal; and the umbilical vein at its entrance into the placenta divided into four branches, one of which split into two, and one of these passed in the membranes to the monster. In Vrolik's paracephalus (No. 6) the cord contained one artery and one vein, and the latter did not communicate with the heart, but formed a venous sinus in the abdomen. In No. 7 both the cords were inserted near the centre of the placenta, and between them there passed a small communicating vein; there were thrombi in the vein of the malformed twin. There were two umbilical veins in the cord of the monster described by Brandau (No. 8), one of which passed to open into the vena cava superior, whilst the other entered into the vertebral canal. In the umbilical stump in No. 9 there was one artery, which passed upwards to the arms and head after giving off a branch to the lower limbs, and one vein, which lay on the left side of the spine and supplied branches to the lower limbs. In No. 12 the cord of the deformed twin contained two arteries and one vein; the vein divided near the pelvic brim into numerous branches with a wide distribution; the right umbilical artery gave off branches to the right leg, to the mesentery, etc., and then passed into the thorax like the ascending aorta, whilst the left artery went straight to the lower limbs and pelvic cavity; the cord of the normal fœtus was united to that of the monster about 3½ inches above the placental insertion, one of its arteries sent a branch to an artery in the cord of the other twin, and the veins of the two cords were united. In No. 14 the cord of the monstrous fœtus was described as of normal length and thickness, whilst that of the normal twin was unusually short. In No. 16 the relation of the cords was not investigated, but it was noted that the umbilical vein of the paracephalic fœtus opened directly into the right auricle. Finally, in No. 17 the cord of the well-formed twin was normal; that of the monster was smaller, and had no twists; its vessels were an artery and a vein, and these anastomosed with the vein and with one of the arteries of the normal funis; the deformed cord was inserted into the fœtus to the left of the sternum in the fifth and sixth intercostal spaces.

GENERAL CHARACTERS.

An analysis has been given of the various clinical and pathalogical facts that have been recorded by the various writers who have described paracephalic fœtuses with hearts, and it is permissible to draw from it the following general conclusions:—

1. The fœtus paracephalus dipus cardiacus is always the product of a plural pregnancy; usually there is one other fœtus in utero, but sometimes there are two.

2. The co-twin is generally normal in appearance, but it is often born dead, or dies soon after birth. It is always of the same sex as the paracephalic fœtus (No. 6 was a doubtful exception), and it is nearly always the first to be born.

3. The mother is almost invariably a multipara, is usually somewhat advanced in years, and has often had a bad previous obstetric history. In no case is there the record of a previous twin-confinement.

4. The pregnancy which results in the birth of a paracephalic fœtus nearly always terminates prematurely, and is occasionally complicated by hydramnios. The fœtus is unable to live separate from the mother.

5. The possible existence of a paternal etiological influence is suggested by the circumstances detailed in No. 6.

6. The paracephalic fœtus has external appearances which are always markedly monstrous; it is generally small in size, but is sometimes larger than its co-twin; and it nearly always shows an œdematous state of the subcutaneous tissue.

7. The head is usually greatly deformed, the brain hydrocephalic, and the face very imperfect.

8. The upper limbs are nearly always defective, and are generally very markedly so; the lower limbs, on the other hand, are always present, and are usually normal except as regards the number of toes.

9. The thoracic walls are sometimes defective; the heart is always present, but is nearly always greatly malformed, and is sometimes not in direct communication with the umbilical vessels; the lungs are often absent, and the diaphragm is sometimes wanting.

10. The liver, spleen, stomach, and pancreas are usually absent; the intestine is defective, and generally ends blindly; the kidneys, ureters, and bladder are in most cases present, but are sometimes defective; and the genital organs are occasionally imperfect or rudimentary.

11. The placenta is probably always single, for in No. 14, although it is stated that there were two placentas, it would seem that they had a vascular connexion; the amniotic sacs are usually separate; and the vessels of the umbilical cord of the deformed twin are usually defective, and communicate with those of the cord of the normal twin.

12. It would seem that the paracephalic fœtus with a heart

must have in it two circulations,—one carried on by its own heart and the vessels connected with it, the other by means of the vessels passing to it from the normal twin; both these circulations are no doubt imperfect, and this imperfection is doubtless the cause of the œdema which is so common.

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IV.—NOTE ON THREE LIVING CASES OF ACHONDROPLASIA (CHONDRODYSTROPHIA FŒTALIS, OR SO-CALLED FŒTAL RICKETS).

By JOHN THOMSON, M.D., F.R.C.P.Ed., Extra Physician to the Royal Hospital for Sick Children, Edinburgh.

(*Read before the Obstetrical Society of Edinburgh, May* 10, 1893.)

IN treatises on rickets and elsewhere in medical literature we frequently meet with descriptions and drawings of premature and still-born children with a peculiar deformity, the most striking feature of which is unnatural shortness of the upper and lower limbs. These used to be regarded as cases of fœtal rickets until examination of their bones proved that they had not the characters of that disease. They were afterwards regarded as fœtal cretins; but now it is recognised that they are examples of an inter-uterine disease entirely distinct from either rickets or cretinism. To this morbid condition a number of names have been applied, the best known, perhaps, being Achondroplasia (Parrot[1]), and Chondrodystrophia Fœtalis (Kaufmann[2]).

We have as yet no idea of the essential cause of this disease. It has, however, been demonstrated that the deformities to which it gives rise are the result of "an absence, arrest, or perversion of the normal process of endochondral ossification of the most definite and universal character in every element of the skeleton in which the process normally takes place during intra-uterine life."[3] This fact explains the nature and distribution of the deformities met with in these cases. For those bones which are formed entirely in membrane, and those which, though formed in cartilage, remain altogether or mainly cartilaginous till a late period of intra-uterine life, are found quite normal in size. Those, on the other hand, which depend on endochondral ossification for their growth *in utero* are all more or less markedly dwarfed. Thus, while the upper part of the cranium, the neck, the trunk (including the clavicles, scapulæ, sternum, and spine), and the carpal and tarsal bones are of the usual size, the base of the skull is too small, causing often a depression at the root of the nose, the ribs and pelvis are deficient, and all the long bones of the limbs are dwarfed to about half their natural length.

In the great majority of cases, the fœtus that is affected by this disease dies *in utero*, or very soon after birth. There are, however, a few cases on record where the child survived for a varying period. For example, Paltauf[4] and Baginsky[5] mention several cases of young infants thus affected; Parrot[6] reports a girl of 7½ years; and Porak[7] gives notes and a drawing of a woman who not only had suffered from the disease herself, but gave birth to an infant who was similarly deformed, and he mentions several other cases of adult dwarfs of this class whose abnormal pelves had brought them under the notice of obstetricians. Boeckh[8] has also recently published a remarkable case of a female dwarf evidently

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[1] *La syphilis héréditaire et le rachitis*, Paris, 1886, p. 280.

[2] *Sogenannte Fœtale Rachitis* (*Chondrodystrophia Fœtalis*), Berlin, 1892.

[3] Symington and Alexis Thomson, *Lab. Rep. Roy. Coll. Phys.*, vol. iv., 1892, p. 238.

[4] *Ueber den Zwergwuchs*, Vienna, 1891, p. 96.

[5] *Festschrift für Prof. Ed. Henoch*, Berlin, 1890, p. 514.

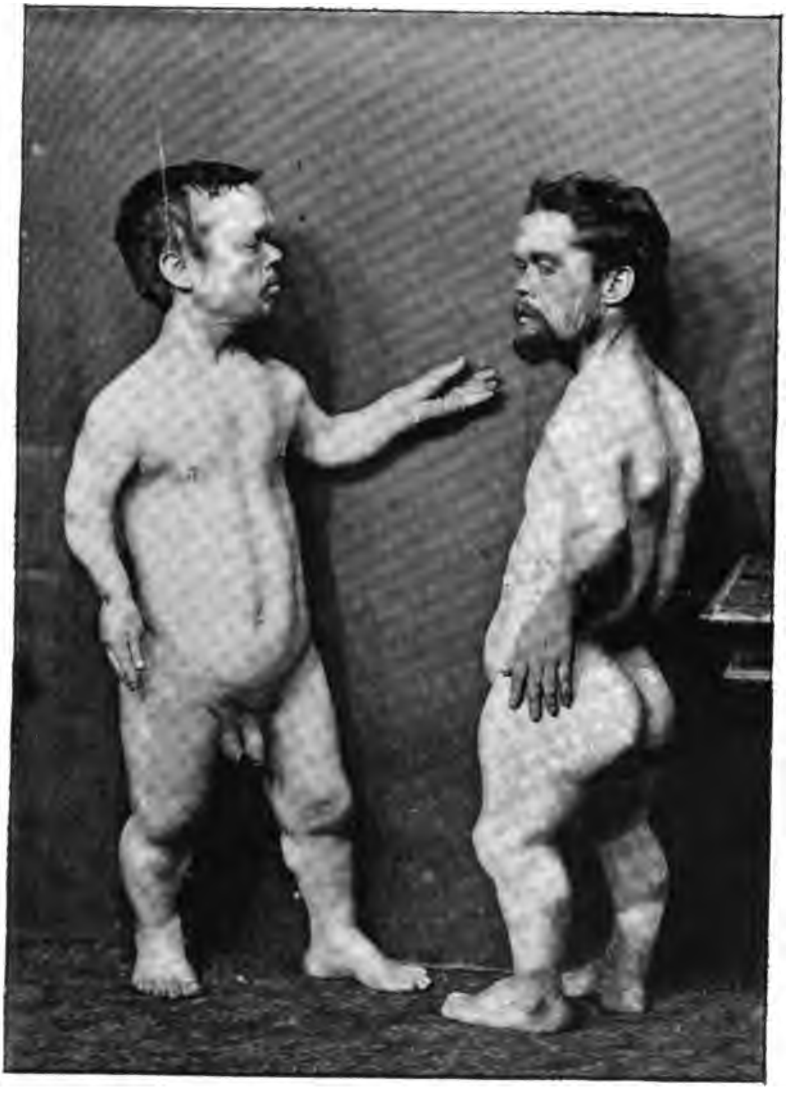
[6] *Loc. cit.*, p. 282.

[7] *De l'achondroplasie*, Clermont, 1890, p. 25.

[8] *Arch. f. Gynækologie*, Bd. 42, H. 2, 1893, p. 363.

PLATE I.

PLATE II.



John E. Alfred C.

of this kind, whose father and several other relatives had been dwarfs with similar proportions.

Parrot has drawn attention to the very interesting fact that this deformity *seems* to have been well known to the ancient Egyptians, as one of their gods is represented in many of his statues as suffering from it. This was Phtah, whose temple Herodotus mentions as being the most imposing of any that he saw in Memphis. And Charcot and Richer[1] have shown that several of the old masters have put figures of this type into their pictures, and that some of the many dwarfs at the Court of Philip IV., who were painted by Velasquez, evidently owed their position to their having suffered from this intra-uterine malady.

As living examples of this disease are rare, and as, so far as I know, no adult male cases of it have been described and figured before, the following notes of three cases of achondroplasia that I have recently seen may perhaps be of some interest.

CASE I.—John D., aged 5 months, was brought to the New Town Dispensary to be vaccinated on 10th November 1891. Dr Cadell noticed the peculiarity of the child's arms, and kindly sent him to me.

Family History.—Father and mother strong, healthy, and well-grown. The patient is their sixth child; the others have all been well-formed.

Previous Condition.—The child was born at full time. He has been on the breast since birth, and has seemed quite well; but he used to sweat a great deal on the head. The mother seems not to have noticed before that anything was wrong with the child.

Present Condition (Plate I.)[2]—The complexion is pale, but the child is bright and intelligent. The head is large, especially at its upper part; the frontal and parietal eminences are very prominent. The root of the nose is slightly depressed. The anterior fontanelle is very large (fully 2 inches square), and bulges a little. The superficial veins on the scalp are not noticeably distended. There is no craniotabes.

The child measures 23 inches in length. The thorax is narrow, and there is marked rickety beading. The heart, lungs, and abdominal organs are normal.

Both upper and lower limbs are abnormally short, although of the usual thickness. The upper arms measure 3 inches from the acromion to the external condyle. The forearms are correspondingly short. It seems as if the bones of all the limbs were too short for the soft parts, for there are deep annular furrows on the upper arm, on the forearm just above the wrist, on the thigh, and just above the ankle. The hands are very broad and short, the fingers thick and conical in shape, with the skin crumpled, as if redundant. When the hand is laid flat so that the palm is not hollowed, the fingers spread out in such a way that their ends are separate from one another, and not so close together as in a normal hand. The index and middle fingers curve to the radial, the ring and little fingers to the ulnar side; thus the interval between the points of the middle and ring fingers is much greater than that between those of the other two pairs of digits. I have noticed this peculiarity of the hand in all cases of this disease that I have examined.

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[1] Charcot and Richer, *Les difformes et les malades dans l'art*, Paris, 1889, p. 12.

[2] Plate I. is from a drawing by Mr John Williamson, and is an exceedingly accurate reproduction of the photograph of the patient.

The child improved a little in his general health under anti-rachitic treatment.

He died some months after of pneumonia, and I believe that no post-mortem was performed.

CASES II. and III.—A few months ago I had the opportunity of examining, with the help of Dr Alexis Thomson, the two men who are figured in Plate II. The shortness of the time at our disposal must be held as an excuse for the somewhat incomplete character of the following notes.

The elder man (Alfred C.) is 39, the younger (John E.) 36 years old. They are exactly the same height—1·25 mètre (49 inches), and in all essential particulars of their deformity they resemble one another so closely that one seems like the reflection of the other.

Alfred C. was born in Devonshire, and John E. in London. They both belong to families all the members of which are said to be tall, well-grown people. They both say that they have enjoyed very good health, and they are apparently of ordinary average intelligence. Neither of them is married.

Alfred C. is extremely muscular; he has been accustomed to work in the fields, and says that he can do an ordinary man's work. Not long ago he walked 72 miles in 5 days.

John E. has mitral incompetence, which may partly account for the smaller development of his muscles. He has never done heavy work.[1]

The conformation of the two men is so very similar that in most points one description will do for both.

Their heads are somewhat square in shape. The measurements are as follows:—Circumference in Alfred C. = 57 cms.; in John E. = 59 cms.; from meatus to meatus in both men measures 39½ cms. In both there is a marked depression about the root of the nose; the palate is highly arched and narrow, and the lower jaw projects somewhat in advance of the upper. The neck and shoulders are normal, including the clavicles and scapulæ. The trunk seems of normal length. The thorax is rather narrow (measuring in Alfred

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[1] At present an enterprising provision-merchant is availing himself of the attraction which their uncouth appearance has for the public to assist him in drawing attention to the excellence of his wares.

C.'s case 83 cms., and in that of John E. 77½ cms. in circumference). There is marked kyphosis, especially in the lower dorsal and upper lumbar regions, and very deep lumbo-sacral lordosis. The movements forward of the spine, as in the act of picking up anything from the ground, are very limited. There is no lateral curvature.

The limbs are normal in thickness, but they are just about half the length they should be. The measurements in Alfred C.'s case are as follows:—

Right humerus = 16 cms.
„ radius = 15½ „
„ femur = 23 „
„ fibula = 23 „
„ tibia = 21 „

Those of the other man are very similar. Both upper and lower limbs present exaggerations of the normal curves; this is most marked in the upper extremities, which cannot be straightened on this account. The ends of the long bones (*e.g.*, condyles of femur) are very large and broad, and terminate abruptly at their junction with the shaft. The hands and feet are very short and broad. The fingers are thick and not quite straight, so that when the hand is stretched straight out with the palm flat their points diverge somewhat from one another—the greatest distance being between the middle and ring fingers.

The gait of both men is extremely waddling, the upper part of the trunk swaying from side to side with each step when they go at all fast.

V.—UTERINE ROTATION: ITS CLINICAL IMPORTANCE IN PREGNANCY AND LABOUR.

By James Haig Ferguson, M.D., F.R.C.P.E., M.R.C.S., Lecturer on Midwifery and Diseases of Women, Edinburgh Medical School; Obstetric Physician, New Town Dispensary.

(*Read before the Obstetrical Society of Edinburgh on* 11*th January and* 8*th February* 1893.)

(*Continued from page* 937.)

(*c.*) *Position of the Uterus in the Third Stage of Labour and Immediately Post-partum.*—It is to be particularly noted that in examining post-partum uteri in an ordinary post-mortem examination they will be found to have fallen backwards in many cases, owing to the relaxation of the muscles and the emptying of the vessels, in conjunction with the dorsal decubitus of the body; and, as I have already said, frozen sections are liable to fallacy.

Owing to the large size of the uterus and the extreme laxness of the abdominal walls in the early days of the puerperium, its position can usually be satisfactorily ascertained clinically after careful examination.

Schroeder and Stratz, in a frozen section which they made through the body of a woman who had just been delivered, found that the uterus was fully a handbreadth above the umbilicus, and had sunk with the fundus towards the right. They describe the uterus as being twisted with its left border forwards.

A priori, we should expect that the post-partum uterus would continue to maintain the same rotation on its longitudinal axis which it had during pregnancy, and this, as a matter of fact, is the case. Rotation is, I think, more marked in the third stage than even immediately post-partum, owing to the strong muscular contraction and retraction; and it is more easily observed, as its shape is not so much modified by its contents as when the fœtus is in utero. Schroeder and Stratz have found that both in the third stage and in the puerperium rotation can be clearly observed.

The puerperal uterus, after complete delivery, usually gives an approximate and diminished representation of the uterus before delivery, and the puerperal uterus is but an accentuated reproduction of its primitive form.

The fundus of the post-partum uterus seldom lies mesially. It usually inclines to the right side,—(1), because it has a natural lie in that direction; (2), owing to some extent to the influence of the rectum; and (3), from the accident of position. If the bladder be distended, the fundus is thrown to the left. Schroeder and Stratz believe that the fundus uteri generally falls over to the side to which it has drawn itself back over the child's breech,—*i.e.*, "in the first position to the right, in the second position to the left. Also the border corresponding to the child's back is rotated forwards: in the first position it would be the left border, in the second position the right border."

In 150 cases which they observed in the third stage, and immediately post-partum, the uterus only occupied the middle line four times, without rotation on its long axis. One of these cases was after the birth of twins with two large, equally developed children. In the other three the breech went straight out of the uterus forwards. In all the other cases the fundus uteri, after the birth of the child, lay to the right, with that border to the front which had corresponded to the back of the child. Spiegelberg says that immediately after labour the uterus is usually in the median line, but now and then inclines to the right, more rarely to the left side, and, as a rule, is twisted to the right round its axis. When the bladder is full it forces the uterus away from the abdominal wall and straightens it. At the same time it pushes it to one side, and thereby increases its rotation round its longitudinal axis. Spiegelberg inclines to think that the distended bladder usually pushes the uterus to the right, but Croom has shown that it generally pushes it to the left.

Croom has found, from clinical observation, that in many cases the puerperal uterus is rotated round its central axis, so that in fact the transverse axis of the uterus no longer corresponds to the transverse diameter of the pelvis. One side of the uterus is thrown forwards, with the result that its transverse axis corresponds to the oblique diameter of the pelvis. Out of forty cases which he noted, ten showed distinct rotation to the right. His observations were made on uteri which had already begun to involute, and where in all probability the altered state of contraction of the round ligaments, and the commencing degeneration of the muscular fibres of the uterus, had modified their original position.

Börner and Pfannkuch have both investigated the rotation of the puerperal uterus. Börner, out of 64 post-partum cases which he observed, relates that in 50 rotation was entirely absent, in 12 the rotation was to the right, and in 2 to the left. His observations, however, as he himself admits, must not be taken as contradicting the usually accepted ideas. He thinks that after involution has set in the uterus is too soft and flabby to be acted upon by the forces which formerly influenced it, and any special position it may take up during that time is purely accidental.

Pfannkuch has observed that when the bladder is full, right rotation of the uterus is increased; and Croom has noted that in cases where the rotation was absent or only slight when the bladder was empty, it was well marked when the bladder was distended.

The bladder usually bulges more to the right side in consequence of its asymmetry, and when it becomes distended it encroaches more on the right side, and thus helps to increase the rotation of the uterus. The post-partum uterus is, on account of its size, very easily influenced by bladder distention. The distention of the bladder by no means causes the rotation of the uterus; it simply increases the already existing rotation.

It is often a difficult thing in the third stage of labour, and immediately post-partum, to tell clinically which is the anterior and which is the posterior surface of the uterus, as on account of its then having a somewhat spherical shape there is often not much antero-posterior flattening. When the placenta is situated in the lower zone of the uterus the anterior and posterior walls can often be well felt. In such cases the palpation of the ovaries will be our guide to its position. Their relations to the puerperal uterus we shall immediately consider. The round ligaments can also be felt in most cases. Chaignot says, "The old lateral borders and angles of the uterus are only marked in the puerperal condition by the different parts of the appendages which are fixed to them."

I have myself observed repeatedly marked lateral rotation of the post-partum uterus, and since my attention has been specially directed to the subject, I have, in nearly every confinement which I have attended, been able to assure myself that such rotation existed. I am thus confident, alike from my own experience clinically and from the records of others, that in by far the majority of cases the uterus in the third stage of labour and immediately post-partum lies obliquely in the pelvis with its left edge forwards, and that this state of matters is much more common at both these times than in any other circumstances. I have often observed right lateral rotation of the uterus in the third stage where rotation could not be definitely made out during labour, and my experience is that right rotation occurs in the third stage just as frequently after right occipito-posterior (O.D.P.) as after left occipito-anterior (O.L.A.) cases.

Where the abdominal walls are very thick it is difficult to satisfy oneself exactly as to the position of the uterus, and it has chiefly been in such circumstances that I could not make sure as regards the existence of rotation.

There is no doubt, then, that although in the non-pregnant condition there is a certain amount of rotation of the uterus, yet that this rotation is greatly increased during pregnancy, especially in the later months, and persists during the early days of the post-partum period.

The uterus is rotated to the right in probably between 80 and 90 per cent. of cases, and one may practically assume that when the fœtal vertex, face, or breech present in the right oblique diameter of the pelvis, the uterus will at the same time be rotated to the right. The one condition may be regarded as almost the corollary of the other, as the rotation of the uterus greatly determines the position of the presenting part.

II. THE OVARIES, AND THEIR RELATION TO THE UTERUS BEFORE AND DURING PREGNANCY.

Each ovary in the unimpregnated condition is situated at the entrance to the true pelvis, about two centimeters from the corresponding horn of the uterus. Hasse describes the long axis of the ovary as lying transversely in the pelvic cavity, with slight obliquity, the opposite organs diverging anteriorly. Schultze has asserted that the long axis of the ovary lies antero-posteriorly in the pelvis. His, from his more recent investigations, believes the truth to lie between these statements. He never found the uterus symmetrically in the middle line. When the uterus inclined to the right, the right ovary lay with its long axis completely vertical, and with one side closely applied to the outer bony wall of the pelvis; but the left ovary, being dragged upon by the uterus, lay obliquely in the pelvis.

From these observations His deduces that uterine rotation will still further exaggerate these respective changes in the ovaries, and that as a consequence to changes in position of the uterus displacements of the ovaries ensue.

Rouget and Krause have observed that in consequence of the asymmetry of the uterus, the right ovary is on a plane a little posterior to the left ovary, which latter is in front and on a higher level. They describe the left ovary as lying close to the abdominal wall, through which it may be compressed in the middle of a line which would stretch from the anterior and superior iliac spine to the symphysis pubis. Posteriorly, according to them, the right ovary is separated from the sacro-iliac articulation by a space of about two centimeters.

Portal has also recorded a difference in height between the two ovaries—the left being on a higher level than the right. This may be the case before pregnancy, but in my experience this only holds good during pregnancy or post-partum, when the uterus is very much lateriverted to the right, so as to tilt up the left ovary. When the uterus is replaced in the middle line the right ovary is usually at a higher level than the left.

Kölliker believes that there is a great physiological variation in the position of the ovaries, but, according to Olshausen, the only change of importance which the ovary undergoes physiologically is its ascent during pregnancy. He says, "In advanced pregnancy one or both ovaries (generally the left) are often felt high up above the pelvis, and in close apposition to the uterus. This is also true of the puerperal period, but the ovaries resume their original position about the twentieth day after confinement."

Rouget well says, *à propos* of the rotation of the uterus, "The effect of this rotation is to alter the position of the ovaries. In pregnancy, owing to the shortening and splitting up of the broad ligaments, the ovaries are in much closer contact with the uterus than in the unimpregnated condition. They rise up into the abdominal cavity as the uterus enlarges, and immediately after labour are on a level with the brim of the pelvis."

There are two important points to be noted about the position of the ovaries in pregnancy,—firstly, that post-partum their distance below the fundus uteri is not nearly so great as in the full-time gravid uterus. After labour the ovaries bear much the same relation to the uterus, so far as distance below the fundus goes, as in the non-pregnant state. The ovaries in a full-time pregnancy, according to Chaignot, are at the middle or at least the superior third of the uterus. Secondly, the ovaries lie in close contact with the lateral walls of the uterus, owing to the shortening and splitting up of the broad ligaments. Their mobility is consequently greatly diminished, but has not entirely disappeared. Charpentier finds that they become vertical, and almost touch the uterus.

Tarnier, Budin, Auvard, and E. Martin, in speaking of the Cæsarean operation, all mention as a danger to be remembered, that the left ovary, owing to the rotation of the uterus, may be found lying under the median incision. Martin says this is most apt to occur in lordosis, and he cautions the operator against accidentally injuring the left appendages, and so giving rise to troublesome hæmorrhage. Tarnier and Budin record cases in which this has happened.

Freund has likewise observed that in consequence of rotation, the left border of the uterus with the annexa approximated more closely to the abdominal wall.

In Winter's frozen section, which I have already referred to as an example of right lateral rotation of the uterus, he describes the position of the appendages thus:—"The conjunction of the left tube is completely to be seen in front. It is 21 centimeters above the upper edge of the symphysis. From this the tube runs straight down in front of the ovary, and surrounds it below and behind. The ovary lies close to the side edge of the uterus, four fingers' breadths above the symphysis. The right ovary lies somewhat higher, hidden behind the uterus. The right tube is invisible in its upper course, and appears first beneath the ovary. The left round ligament runs considerably nearer the median line than the right."

Schroeder and Stratz likewise confirm, from their own observations, the fact that as a consequence of the rotation of the uterus the ovaries follow its movements, and so one lies more anteriorly and the other more posteriorly. They have also observed that in consequence of the anteflexion of the puerperal uterus, and the relaxation of its appendages, the ovaries fall forward over the tubes.

Condition of the Ovaries during Pregnancy.—There can be no doubt but that the ovaries increase in size during pregnancy. Murat, Velpeau, and Chereau say they are softer and more voluminous; Courty, Joulin, and Cazeaux say they are notably augmented; while Stoltz, Jacquemier, Tarnier, and Chantreuil say they are doubled in size. The ovary which contains the corpus luteum is always the bigger of the two.

Nervous Supply of the Ovaries.—The uterus and ovaries have a very rich nerve supply. The nerves are derived from four sources:—(1), The spermatic; (2), the hypogastric; (3), the conjoined hypogastric and sacral; and (4), the internal pudendal.

The ovarian plexus is an appendage of the renal plexus, and accompanies the ovarian artery; at the level of the hilum its branches penetrate with the vessels into the interior of the gland, and ramify themselves in the cortical zone. Gaskell finds that cerebrospinal nerves pass to the hypogastric plexus, and thence to the uterus and ovaries by visceral branches of the 2nd and 3rd sacral nerves, which form part of the pelvic splanchnics, and are known as the *nervi erigentes*. The sympathetic fibres, on the other hand, pass to the inferior mesenteric ganglion along the *rami efferentes* of that ganglion, and thence to the hypogastric plexus.

Elischer finds that the nerves of the ovary enter into its substance in the form of medullated fibres, accompanying the looped and tortuous vessels that pass to the hilum, and run also in the proper ligament of the ovary.

Frankenhäuser and Jastreboff have shown that the nerves and ganglia of the uterus and ovaries increase in number and size during pregnancy.

Braxton Hicks, after remarking how intimately the uterus and ovaries are connected with the sympathetic nervous system, and how they are almost entirely supplied by ganglionic nerves, goes on to say that the nervous structures and ganglia grow and increase in pregnancy; that the susceptibility of the uterus is increased, and its reflex phenomena more marked.

Vascularity of the Ovaries during Pregnancy.—Velpeau says that during pregnancy the bloodvessels of the ovary dilate, sometimes to the point of rupture. Roux, Murat, and Chéreau say that there is a spongy state of the organs in pregnancy, due to the augmentation of calibre of their vessels, which bring blood to them in greater abundance. Chéreau and Hervieux rely on this physiological congestion to explain the frequency of puerperal ovaritis. Churchill and Stoltz also believe that there is increased blood-supply. Bischoff and some others have denied this engorgement of the ovarian vessels in pregnancy.

It seems to me, however, that all the evidence is in favour of increased blood-supply during gestation. The ovaries are supplied from the same arterial trunks as the uterus, and if there be not active congestion, there will be at least passive congestion, as may be seen in the rectum, vulva, and lower limbs.

Devalz and Richet have described varicose dilatations of the bulb of the ovary in the broad ligament during pregnancy, which from excessive distention have even ruptured, causing a variety of periuterine hæmatocele. They believe this ovarian varicocele to be the result of the frequently repeated congestion at the menstrual epochs.

Sensitiveness of the Ovaries during Pregnancy.—Loumaigne and Puech deny the sensitiveness of the ovary in the normal state. They base their assertions on cases of hernia of the ovary. In their cases, however, the ovaries had become atrophied, and consequently were not tender to touch.

Guersant and De Coste have observed cases of ovarian hernia in which "the sensation of pain on pressure was similar to that of a testicle" (Chaignot).

Percival Pott's well-known case of double ovarian hernia shows that in a healthy woman the ovaries were exceedingly tender on the least pressure.

Hegar and Kaltenbach also show this, and Murat likewise adduces instances of the tenderness of healthy ovaries.

Puech thinks that the ovaries are only tender in what he calls abnormal conditions, as when they are congested in menstruation.

Professor Courty of Montpellier writes as follows:—"La *sensibilité normale* de l'ovaire est exquise (elle n'a pu être niée que par des médecins inexpérimentés); sa sensibilité pathologique est développée à un tel point que la moindre pression y provoque des douleurs atroces."

There can be no doubt that congestion, whether active or passive, will make the ovaries more sensitive to external pressure, and pregnancy certainly fulfils this condition.

After thus considering the position of the uterus and ovaries in pregnancy, one is impressed with the fact that in consequence of the uterine rotation so commonly to be observed, one of the ovaries (usually the left) is brought close under the abdominal wall, and consequently might possibly be injured by pressure through the abdominal wall. There can be no doubt that the ovaries during pregnancy are very sensitive, and pressure upon them causes pain which is sometimes very severe.

Budin has recorded some very interesting cases which prove this. He has noticed that in palpating the abdomen in pregnancy he has sometimes found moderate pressure with the fingers on the abdomen produce very sharp pain. The pain was clearly localized, was distinctly produced by the pressure of the fingers on one spot, and caused the patients to groan or cry out. Pressure on the neighbouring parts was not in the least painful. At the spot where the pain was felt, a small body moved below the finger, being movable transversely but not perpendicularly. Its form was oval, its great axis usually vertical, but sometimes oblique from above downwards and from within outwards, and its size was generally about that of an olive. This Budin believes to be the ovary. It is nearly always to be found on the left side near a line drawn from the umbilicus to the anterior superior spine of the ilium. A resisting surface, generally the fœtal back, allows the pain to be more readily provoked and the movable body more easily to be found. Budin goes on to say that the ovary is to be felt to the left and forwards on account of the rotation of the uterus during pregnancy, which brings its left border forwards, and by the fœtal back being to that side. He does not say how many cases he had investigated, but that "in only two of the many cases" which he has observed was the right ovary to be felt to the right side and forwards, and in these cases the fœtal back was also forwards and to the right.

If the uterus contract, it is easy to produce by pressure a sharp localized pain, and to feel the ovary rolling beneath the fingers. When contraction ceases, this is often more difficult. The round ligament may be felt rolling under the finger, but it is painless on pressure, and is not oval in shape, but more like a cord. None of Budin's cases were hysterical.

Budin proved that this tender oval body as described was really the ovary in a case in which he had palpated it previous to a Porro's operation. Both Tarnier and he found before the operation the ovary lying to the left and towards the middle line of the abdomen; it rolled under the finger, and was painful when pressed. When the abdomen was opened the first part of the uterus which presented itself was the left border with the ovary adhering, and they proved that it was it which they had previously felt through the abdominal wall.

Chaignot, in less than three months, made thirty consecutive clinical investigations on hospital patients, and found that abdominal palpation employed at the end of pregnancy may produce on the sides of the uterus in a certain number of women a sudden and sometimes very sharp pain. He has identified this pain with pressure on the ovary, and he finds that it is most easily produced when the ovary lies on a resisting surface, such as the back of the fœtus or the contracting uterus. "The pain is felt most frequently to the left, owing to the torsion of the uterus bringing forward its left lateral edge."

Its usual position, according to Chaignot, is near a line drawn from the anterior superior spine to the umbilicus, usually a few centimeters above it in the last month of gestation. The average distances are as follow:—8 to 10 centimeters from the anterior superior spine; 17 to 19 centimeters from the umbilicus; 6 centimeters behind the prominence formed by the round ligament.

	Left Side.	Right Side.
	Centimeters.	Centimeters.
Distance from anterior superior iliac spine, ...	9 to 10	7 to 8
Distance from umbilicus, . .	17 to 19	18 to 20
Distance from round ligament, .	5 to 6	5 to 6

I have made a short abstract of Chaignot's cases, which I here append:—

23 *Cases—Ovary felt on Left Side.*—17 were O.L.A. throughout. 3 were O.L.A. with left ovarian pain to begin with. One changed to O.D.P., and the left ovarian pain changed to right ovarian pain. One changed to O.L.P., and the pain on pressure disappeared, and the ovary likewise ceased to be felt. One changed to O.D.P., and the ovarian pain, though still in the same place, was not nearly so sharp. 3 were O.D.P. throughout.

3 *Cases—Ovary felt on Right Side.*—3 were O.D.P. throughout.

4 *Cases—Ovary felt on Both Sides.*—2 were O.L.A. One was a hysterical patient; the fœtus was very large, the uterus was inclined to the right, but there was no rotation. The other showed right lateral inclination and slight right rotation. The right ovary could only be felt during a pain, as it was further back. 2 were O.D.P. There was no rotation in either case. In one there was no lateral inclination.

Analysis of Chaignot's Cases.

The vertex of the fœtal head lay with its long diameter in the right oblique diameter of the pelvis in every case to begin with (one changed to O.L.P. afterwards):—

22 primary O.L.A. in 30 cases =73·4 per cent.
8 primary O.D.P. in 30 cases =26·6 „
23 cases had left ovarian pain =76·7 „
3 cases had right ovarian pain =10 „
4 cases had double ovarian pain=13·3 „

Chaignot believes that the reason why, in right occipito-posterior cases, the anterior ovary cannot well be felt to the left is because there is no resisting fœtal back to press it against. He believes that "the size of the fœtus, multiple pregnancy, nervous and irritable temperament, and hysteria, are among the conditions which favour the appearance of ovarian pain, and especially its intensity."

Chaignot has likewise sought for the ovaries post-partum within eight or ten days, but he has never been able to make them out definitely except once,—"as the hard resisting plane of the uterus is then wanting, and it would require very deep palpation." He has provoked ovarian pain by pressure during the puerperium, which was always felt several centimeters below a line drawn from the anterior superior spine to the umbilicus; and the less recent the delivery, and the more retracted the uterus, the deeper the pain is. When he found ovarian pain after delivery, it was generally during the first days. The furthest period at which he could produce it was the eighth or ninth day. His conclusion is, that the ovarian pain produced by pressure during pregnancy can be reproduced after delivery.

(*To be continued.*)

VI.—NOTE ON THE NUMBER OF BACTERIA IN THE SOIL AT DIFFERENT DEPTHS FROM THE SURFACE.

By Alexander C. Houston, M.B., D.Sc., Edinburgh.

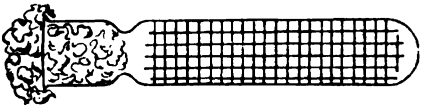
The samples of soil were obtained from a plot of ground, situated in the grounds of Morningside Asylum, Edinburgh, which had never been disturbed except near the surface, and which had lain untouched, even at the surface, for a considerable time. The method followed was, with some slight modifications, that recommended by Hueppe and other authorities, which consists essentially in mixing the sample of soil with sterilized water, and adding a definite number of drops to the nutrient gelatin by means of a sterilized and graduated pipette. It differs materially from the method used by

Fraenkel and others, in which the soil is directly brought into admixture with the gelatin, and which is open to the objection that it is difficult, if not impossible, to obtain separate colonies without using either a large amount of nutrient material or an exceedingly small amount of soil. That this is an objection to Fraenkel's method will be understood, when it is remembered that the bacteria in the soil are so numerous that in a gramme of soil at the surface there are more than a million (Table II.) The proportion of soil to water will depend chiefly on the depth from which the sample of soil is obtained. The following table (Table I.) indicates approximately the strength of soil mixture which will be found most convenient, and the number of drops of such mixture which should be added to the nutrient medium for different depths.

TABLE I.

Depth from the Surface Downwards.	Amount of Soil in Grammes.	Amount of Water in Cubic Centimetres.	Number of Drops added to the Nutrient Gelatin.
Surface.	0·5	1000	2–4
1 foot.	0·5	1000	2–6
2 feet.	1·0	1000	2–8
3 feet.	1·5	1000	2–10
4 feet.	2·0	500	2–12
5 feet.	3·0	500	2–14
6 feet.	4·0	500	2–16

Beginning with the surface layers of the soil, the method which was followed may be briefly described as follows:—With any convenient sterile instrument, a small amount of soil is transferred from the surface layers of the ground to one or more sterilized test-tubes plugged with cotton wool. The test-tube is next weighed, and a small portion of the contained soil (about the size of a small bean) is allowed to fall into a plugged flask containing a litre of sterilized water. The test-tube is then re-weighed, the difference between the two weighings representing the amount of the soil which has been added to the water. A definite amount of the remaining soil is weighed into a tared porcelain dish, heated to 100° C. for three hours, cooled in the desiccator, and then re-weighed: the loss of weight indicates the amount of moisture in the soil. The flask containing the soil mixture is shaken at intervals for one hour, and a portion of the liquid removed with a sterilized pipette, the dropping capacity of which is known, and two to four drops added to test-tubes containing nutrient gelatin. Plate or roll cultures are then made, and after incubation the colonies are counted at as late a date as the liquefaction of the gelatin or the crowding of the organisms will allow. The results given in the accompanying table (Table II.) were obtained by using the modification of Von Esmarch's gelatin roll cultures, which is described in the December number of this Journal of last year. The calculation necessary to arrive at the number of germs is quite simple, since each colony represents the growth of a single germ. The number of colonies multiplied by the number of drops in 1 cc., multiplied by the number of cubic centimetres of soil mixture, divided by the amount of soil used, multiplied by the number of drops used, equals the number of germs in 1 gramme of the soil. To facilitate the counting[1] of the colonies in the test-tubes, longitudinal and transverse ink lines were drawn on the glass (see Fig. 1), and after the colonies in a square had been counted and the result noted down, a cross was made in that square to prevent any danger of recounting. These lines need not necessarily be equidistant or parallel.



In order to obtain samples of soil below the surface, a hole must be dug a little deeper than the level from which the sample of soil is to be taken, and after scraping the side of the excavation with a sterile instrument at the desired depth, so as to remove any trace of soil which during the digging operations may have adhered at that point, and which may not be a true specimen of the soil at the level in question, a sample of soil is taken and transferred to a sterilized test-tube. A convenient instrument for this latter purpose is a cylindrical piece of tin, ⅜ths of an inch in diameter and 12 inches long, with one end somewhat flattened. This simple instrument is covered with paper and sterilized, and when ready for use the paper is carefully removed, and the cylinder grasped in the middle. The flattened end is bored into the earth, and then the soil is shaken out of the other end into the test-tube. This prevents a sample of soil being obtained containing small stones, which would interfere with the accuracy of the experiments; and it further tends to prevent any clogging, because, when the soil has passed through the flattened end, it lies in a wider space, and so can be readily shaken out of the other end. In order to obtain as accurate results as possible, a fresh hole was dug from the surface for each of the depths, and the samples of soil taken as soon as the digging operations were completed, and the rest of the process carried out with the least possible delay.

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[1] Dr J. Buchanan Young has quite recently invented an ingenious instrument for counting the colonies in roll cultures.

TABLE II.—*Number of Bacteria in the Soil at different Depths.*

Level.	Number of Experiments.	Number of Samples of Soil.	Moisture in Soil.	Average Number of Germs in 1 Gramme of Soil.
Surface.	14	5	17·9 %	1,687,799
1 foot.	12	4	16·7 „	1,103,589
2 feet.	19	5	10·4 „	902,944
3 feet.	25	5	8·2 „	173,807
4 feet.	19	5	9·2 „	25,130
5 feet.	15	3	7·6 „	922
6 feet.	18	5	5·5 „	410

No attempt is made in this paper to describe the different kinds of micro-organisms met with in the investigation, and which included such well-known forms as the Bacillus Mycoides, Bacillus Fluorescens liquefaciens, Bacillus Fluorescens (non-liquefying), Bacillus Subtilis, Potato Bacillus, various mould fungi, and the Cladothrix Dichotoma, which is easily recognised by the beautiful brown colour with which it stains the nutrient gelatin.

The work was done in the Laboratory of the Royal College of Physicians, Edinburgh.

VII.—A CASE OF PUERPERAL ECLAMPSIA.

By J. W. MARTIN, M.D., F.R.C.P.E., etc.

(*Read before the Obstetrical Society of Edinburgh, December* 12, 1892.)

MR PRESIDENT AND FELLOWS,—The case which I bring before you to-night is one of puerperal eclampsia. I trust that the details of this case will be interesting to those of you who have already met with similar ones. The occurrence of puerperal eclampsia is sufficiently rare to permit of its being brought up as a separate item.

J. W. or D., aged 21, by occupation a mill-worker; married; primipara. I was sent for on Tuesday morning, Nov. 15, 1892, and found her in labour. I learned that she was having fits, and that she had fallen on the floor at 8.15 A.M., when the labour pains first occurred.

Previous History.—For the last four years the patient has complained of an almost continuous severe headache and giddiness. She had been treated for this in Belfast, but it was not quite cured. The headache used to be especially bad in the morning. The patient felt useless and unfit for work until she had had her morning tea. She has never previously suffered from a fit. A few days ago she noticed that her legs and ankles were swollen.

For some time she has complained of considerable pain in her left shoulder, so severe that her husband has had to hold her for two or three hours at a time. She often said on these occasions, "My left lung is gone,"—a phrase to express the pain she felt. During her pregnancy she suffered considerably from vomiting. Her circulatory system appears to have been healthy. The patient never suffered from either rheumatism, gout, or syphilis, but she had smallpox in Leith when a girl, and her face was pitted. Formerly her digestive system was good. Her social condition was comfortable, and she was scrupulously clean. She has always been temperate and cheery, and was fond of singing.

Family History.—Patient's father is alive and well. Her mother, who is in advanced years, suffers from cough and rheumatism; she complains of swollen and painful legs. Patient has four sisters; three are healthy, but one, who lives in Edinburgh, is peculiar. She is suspicious, takes strange notions, hears noises in the house, etc., but she does not suffer from headache.

Menstrual History.—This was not ascertained, but the patient never suffered from discharges. Her digestive system was often impaired, notably the last nine months. She is strong, robust, weighs over 12 stones, and is well nourished.

History of the Attack.—On arriving at the house I found that the first stage of labour was in progress. When she got up in the morning she complained that everything was dark, and she fell on the floor and the pains came on. The patient was not perfectly conscious. The pains were frequent and good. As soon as possible I ruptured the membranes, and the head engaged at the brim. Thereafter, as the patient was in great distress, and the premonitory symptoms of a fresh seizure manifested themselves, I put her under chloroform and applied the axis-traction forceps, delivering a full-term healthy female child. The third stage of labour was normal; the uterus was firmly contracted, a binder was applied, and then the perineum, which was torn, was repaired. By this time it was 11.45 A.M.

The subsequent history of the case relates to the fits and their termination. Up to the time of the termination of labour the patient had had five fits. During the afternoon and evening she had thirty. They occurred every sixteen or seventeen minutes. Various remedies were employed. Chloroform was invariably administered to control each fit. Before labour was completed, and also between the fits, chloral hydrate was given in 15-grain doses, and subsequently half-drachm doses of bromide of potassium as well. After the completion of labour an enema of castor oil and 15 grains of chloral hydrate was administered, and resulted in a copious watery evacuation. Hot poultices were applied to the lumbar region, and hot cloths over the heart. The patient was bled to a small amount from the left arm. The blood was clotted. Spirits of sweet nitre, hyoscyamus, and elaterium ($\frac{1}{4}$ gr.) were administered by the mouth. In the evening a quarter of a grain of morphia was twice injected subcutaneously, also pilocarpine. 24 ounces of albuminous urine were drawn off. The temperature at 10 P.M. was 105; the pulse was very rapid and intermittent. From 10.20 to 12.20 the patient had no fits, but at a quarter to 1 A.M. a very violent fit occurred. It was so severe that the patient had to be held down, and chloroform was again administered. Another fit occurred in fifteen minutes. After three-quarters of an hour's interval the fits recommenced, and occurred every twelve minutes. The last took place at 7.30 A.M. and lasted a quarter of an hour. During the whole of the night the breathing was stertorous and laboured, and the patient foamed at the mouth, and it was churned from her nostrils. During the last six or eight hours of the patient's life Cheyne-Stokes respiration was very marked. Only once, at about 4 A.M., the patient appeared to regain consciousness for a moment, and exclaimed, "Oh, God!" Death took place at three minutes to 8 A.M. She apparently suffered no pain, but passed quietly away.

Description of the Fits.—During the fits the patient stretched herself, and her right arm was raised above her head. The fingers of the right hand were partially clenched. During some of the fits she tried to bite, but more usually she foamed at the mouth. Her face was swollen. Sometimes she screamed and cried out. In the delirium she used foul language. Her breath had no peculiar smell. The pupils were markedly contracted throughout. At death the right eye was noticeably turned upwards.

During the first fit, after midnight, the patient was very pale, but subsequently reaction came on and her face was flushed. The skin, especially of the forehead on the left side of the head, was covered with a clammy sweat. On the application of refrigerant lotions to her head she moved it from side to side only, as if conscious of them. At 5.55 A.M. her moans were so loud that they were heard by persons living two flats above her. Unfortunately no post-mortem examination could be obtained.

Before giving pathology of the disease and remarks, let me record one other cause mentioned.

Authorities differ as to causation of puerperal eclampsia. It may be due to plethora, to albuminuria, or, according to Frerichs, it may be due to toxæmia. Sir James Simpson thought it was caused by some alkaloid circulating in the blood. Others think that it is due to cerebral anæmia which is present in the pregnant condition. There is increased arterial tension, which is rendered more marked by the restlessness of the woman in labour and her efforts of straining during a pain. Hence there may be temporary hyperæmia succeeded by serous suffusion into the brain, followed by pressure on the small vessels, causing more marked cerebral anæmia.

It is found in some cases of puerperal eclampsia that the kidneys have been perfectly normal, and in other cases where we know that uræmia has existed in pregnancy no convulsions have occurred. I believe that there must be some poisonous principle circulating in the blood which acts on the respiratory and other centres at the base of the brain and in the medulla. The fit ceases whenever the brain centres have discharged their energy, which has been liberated by the irritant action of the poison brought to them by the blood. We may ask, Where does this toxic principle arise? It may be that it arises in the kidneys. If so, the disease is of the nature of uræmic poisoning. Be this as it may, however, the nervous ganglia in the uterus and kidneys must be implicated. There may be an excessively anæmic condition of the brain, for it has been found on post-mortem examination that the meninges of the brain are congested, whilst the brain centres are anæmic. The condition of blindness in the morning showed an anæmic state of the visual centre.

The cause would appear to be centric, not peripheral. Certainly various products due to faulty excretion must be circulating in the blood. In this case the amount of urine drawn off was very noticeable, showing that there was excessive secretion. The urine was albuminous. It is noticeable, too, that the feet and ankles were swollen some days before labour set in. The patient's pulse was of high tension. She suffered from Cheyne-Stokes breathing and laboured respiration. In all probability there was renal disease in this case.

The child was of large size, and therefore the opinion may be expressed that the over-distended uterus pressed upon the nerve plexuses governing the secretive functions of the already diseased kidneys, and therefore the morbid products which ought to have been eliminated were allowed to circulate in the blood. These products, having an affinity for the brain and the higher nerve centres, brought about the convulsions which in this case had a fatal issue.

It appears to me that the case affords a striking example of the helplessness in medicine to meet a condition of such gravity when it arises, and illustrates forcibly that our knowledge of disease is far from being perfect even at the present day.

THE EDINBURGH INCORPORATED DENTAL HOSPITAL AND SCHOOL.

AMONG the numerous medical and surgical charities of Edinburgh, this is one useful in many ways, and if the Edinburgh Medical School is to cope with the other licensing centres of England, Scotland, or Ireland, it is one which is now indispensable. Comparatively little seems to have been either said or heard about the Edinburgh Dental Hospital and School. The work it has accomplished and the relief it has afforded will, notwithstanding, bear comparison with any other institution of the kind. It is by no means a creation of yesterday. For more than thirty years it has passed through successive stages of development, and at this crisis in its history, when its site is to be absorbed in the Royal Infirmary Extension Scheme, and its future existence to be established on a new basis as a charitable and educational incorporation, a brief *résumé* of its rise and progress may not be uninteresting.

Sometime before, but especially towards the middle of the present century, the position occupied by dental surgery had been asserting itself—not only throughout the medical profession, but among the general public—as unsatisfactory. Its place previous to that time had been held not merely as subordinate to every other branch of surgery, but was even regarded as somewhat beyond the pale of professional respect. There were reasons for this. There were no teaching or licensing centres where its votaries, even if they wished it, could either be educated or obtain anything like a legitimate diploma or other qualification; and there was no guarantee of fitness or certificate of competency required of them. Its ranks consequently comprehended a heterogeneous medley—a motley crew unmatched in any other surgical speciality. Here and there, no doubt, were to be found legitimate and qualified practitioners whose names will ever command respect as well as honoured historical recognition. But they constituted the minority, were few and far between, and subject to be classed indiscriminately along with, and estimated at the low level of the majority; while, generally speaking, the better members of the fraternity were ashamed of the name of Dentist, and blushed to acknowledge its practice as their mode of livelihood. About the time under notice, however, the aspect of matters began to undergo a material change. Up to a comparatively recent date the practice, not only of dentistry, but of all specialties in medicine or surgery, had been very generally looked at askance, and their exclusive practice was by some regarded as bordering upon quackery; while as for the dentists, they were deemed a kind of Ishmaelites whose hand was the terror of every man, and against whom every man's hand was ready to be raised. The sectional departments of Ophthalmic, Aural, Nasal, Laryngeal, and even Obstetric Surgery, when they were recognised at all, were classed as of minor importance, most of them but ill represented at the School,—none of them in high repute among practitioners; while to attempt elevating and classifying Dentistry as deserving a place among them would have been denounced as a piece of bewildering presumption.

As the methods and resources of medical inquiry advanced, however, and with a deeper insight into its facts and revelations, and a wider and more intelligent view of the bearings and domain of pathology in its general scope, dental disease and its accompaniments began to be assigned a much more liberal share of interest and importance than before. It began to be considered and emphatically urged that for the training and qualification of dentists legislation of some kind was as necessary as for practitioners of any other specialty in medicine or surgery, and that steps should be taken to secure some movement of the kind, in the interests both of its practitioners and the public. It was perhaps in London that the earlier dawn of such a movement had first manifested itself. But it was not very long before its light reached Edinburgh, resulting in the conviction being felt that in the interests of its large and illustrious Medical School some measure of the kind was essential there also, and at no distant date it would be demanded. In London, however, matters took a more active and practical turn, and were being now vigorously pushed forward. By the Medical Act of 1858 power was reserved for the Royal College of Surgeons of England, exceptionally, to examine and grant certificates of fitness in dental surgery, and that body was not long in availing itself of this privilege, since previous to the close of 1860, the London School of Dental Surgery, a curriculum of instruction for its students, and the "Dental Diploma" of the Royal College of Surgeons there, became established facts. The good results arising from this better organization of the profession soon showed themselves in the spirit which was manifested in other places besides London, and nowhere was the desire for progress and improvement better exhibited, at that time, than in Edinburgh. No doubt a legal qualification or diploma was not as yet imperative for dental practice, but it was felt that anything of the kind, for those who wished it, being obtainable in London only, would constitute a monopoly of an objectionable kind, and it was evident that unless Edinburgh in some way or other followed suit, it would be detrimental to the prestige of its Medical School. Under these circumstances, and as might have been expected, every encouragement was given for providing or facilitating instruction, if nothing more, in this branch. A communication had been addressed to the Edinburgh College by Dr Smith, urging that either a full surgical qualification or a special course of instruction should be required for entering upon the dental profession. A course of lectures on Dental Anatomy and Surgery had already, in 1856, been commenced by him, and were going on in the Medical School at Surgeons' Hall; and it now remained in conjunction with these to provide the means of practice and observation, as supplemental to instruction by lectures, in the treatment of dental disease. Accordingly, it was decided to try an experiment of this nature, and in January 1860 the formation of an institution of the kind may be said to have been set on foot by the opening of what was then known as The Edinburgh Dental Dispensary in Drummond Street. No qualification of any kind being as yet legally required of dentists, the Dental Dispensary may be said to have been, during the first years of its existence, to all intents and purposes almost solely a charitable institution. At first very few students attended it; but even the number of patients was not large, only 260 being treated there during the years 1860–61. The fact of its existence had yet to become known; and many difficulties, some anxiety, and a certain amount of expense to be encountered and overcome, was the experience of its original staff in working the new charity for the first two years. After that time, however, its services began to be more fully appreciated, and its promoters were soon rewarded for their exertions in witnessing its rapid progress and its favourable reception by the patients for whom it was intended. Speaking of the Institution, even at this early period of its existence, Alfred Hill, in his *History of Dental Reform in Great Britain* (1877), says, "Its success and growing importance led to its direction being placed under the control of a regularly constituted Committee, who now appealed to the public for contributions for its support, instead of relying for aid, as formerly, upon the generosity of those gentlemen connected with it." This had been only in the second year of its existence; yet its promoters found the promise of this young charity such as to warrant some new arrangement for its management as a rapidly growing Institution. There was accordingly appointed to its staff, in addition to its original dental staff, Profs. Goodsir and Spence of Edinburgh University, as Consulting Surgeons; Mr Nasmyth, who in conjunction with Dr Orphoot and Mr Imlach had supported Dr Smith in the establishment of the Dispensary, now becoming Consulting Dental Surgeon; while a Committee of Management was at the same time appointed, consisting of the President of the Royal College of Physicians, Dr Craigie, the President of the Royal College of Surgeons, Dr Newbigging, Prof. Goodsir, Prof. Christison, Prof. Sir J. Y. Simpson, Dr Begbie, Dr Burt, Prof. Spence, Dr James Duncan, and Dr Omond; while, subsequently to this date, again the dental staff was increased by the addition of several of the leading dentists of Edinburgh. Onwards and always increasing in usefulness, through many trials and difficulties, but invariably with a meagre exchequer and unaccountably indifferent public support, moved the Dental Dispensary, up to the period of the passing of the Dentists Act in 1878.

Much benevolent work had meanwhile been done by it during the period intervening between this last important event and the date of its foundation. Its patients now numbered somewhere about 2500 a year. Its staff, its directorate, and its locality had, besides, undergone not a few amendments and alterations. It had removed to Cockburn Street, where it was successively accommodated, first in the premises of the Eye Dispensary, and afterwards in others rented by itself. And now a crisis had occurred in the completely altered aspect of dental affairs, when two serious alternatives had to be faced. Hitherto the possession of a dental diploma had been, as already said, an optional matter; now it was to be legally enforced as imperative on any one assuming the designation of dentist. Further, in order to obtaining this diploma, candidates were required to attend, for a stated period, the practice of a recognised dental hospital or some equivalent charity; a supplementary curriculum of study was, under the supervision of the General Medical Council, drawn up by the different surgical corporations; a scheme of Examinations was organized, and Licensing Boards conferring their dental diplomas respectively were established in England, Scotland, and Ireland. It came, therefore, to be decided whether, in view of and to meet the requirements of the new Act, the Edinburgh Dental Dispensary should extend its work and its accommodation, or, on the other hand, so far as dental teaching was concerned, close its doors and leave this branch for the present a blank in the Edinburgh Medical School. The large outlay required for such innovations as were now called for, with the admittedly and necessarily small numbers of dental students, indicated no great gain to the Institution, while it was feared that the idea likely to get abroad that it had now become a teaching, and so far a self-supporting body, might strike a blow at the subscriptions, upon which its very existence still would depend. Numerous meetings and conferences were held, where all these matters were carefully considered, when, after mature deliberation, it was resolved to make an effort to prevent a result so undesirable, if not disastrous, as seemed imminent. In the words of the "Prospectus" recently issued by the directors in reference to the new constitution of the Hospital, "It was resolved to go on with the work among the poor, and add to the Dispensary a Teaching School. This necessitated the acquiring of larger premises, and in November 1878 they took, upon a lease for ten and a half years, the premises No. 30 Chambers Street. As the Institution thereafter embraced both departments, its name was changed to that of the 'Edinburgh Dental Hospital and School,' and under that name it was carried on in Chambers Street until Whitsunday 1889."

At that time, however, it became quite apparent that again the increase in the number of patients, amounting at the present day to between 8000 and 9000 a year, required still larger and in many ways more suitable accommodation; and as a change in the arrangements of the Dental Department of the Royal Infirmary was also about this time contemplated, while the house belonging to the Infirmary, situated in No. 5 Lauriston Lane, had been suggested as suitable for the purposes of the Dental Hospital and School, negotiations were entered into with the Infirmary Managers for a lease of it for fifteen years, with a break at the end of five; with the result that after arranging for its being fitted up with every modern furnishing for such an Institution, and with the understanding that the services of the dental staff might be made available at the Infirmary as occasion required, the house was taken possession of at Whitsunday 1889.

It was now hoped and somewhat confidently expected that, with the accommodation secured and the appliances and appointments of the new Hospital and School rendered, after considerable trouble and expense, most complete, a long course of occupation might be relied upon. But in this the Directors were disappointed. The proposed extension of the Royal Infirmary across Lauriston Lane cropped up, and rendered the tenure of the lease too precarious and uncertain to be risked. They felt that circumstances might arise when any notice to quit would be surrounded by so many difficulties as would be next thing to the destruction of such an Institution; and they were driven to the conclusion that "It was time to secure some premises of their own, from which they could not be removed."

With the view of avoiding the expense of applying for a Royal Charter, and at the same time of placing the Hospital on such a footing that some action of the kind could be properly and legitimately entered upon, they resolved to secure if possible the benefit of becoming a corporate body, under the provisions of the Companies Act of 1867, by authority of the Board of Trade. In this they were successful, and as such an incorporated body it was next resolved to apply to the general public for aid in accomplishing what seemed so just and reasonable an end as becoming proprietors of the premises they now have secured. These consist of the large block of buildings, No. 31 Chambers Street, formerly No. 17 of old "Brown Square," described in *Old and New Edinburgh* as the large house "with the painted front, on the north side, the interior of which, with its frescoes and panellings, is now one of the finest specimens of a fashionable Edinburgh mansion of the 18th century; and wherein lived and died Lord Glenlee, who —*Ultimus Scotorum!*—resisted the attractions of three successive New Towns, to all of which his brethren had long before fled." Such a resolution has been carried out in the form of a short statement of the nature and circumstances of the Institution, with an appeal for subscriptions towards the purchase of this tenement.

Space will not here permit even an allusion to the names of all those who, both long previous to the day of the Dispensary, and especially during the present Hospital's career, have taken part not only in its promotion, but in advancing dental surgery to what it has now become; but their labours and their aims have been such, that at the present day, after a somewhat chequered career of three and thirty years, it seems but justifiable that an Institution of the kind should seek to secure for itself, among the other medical and surgical charities of Edinburgh, a becoming "local habitation and a name."

Part Second.

REVIEWS.

Diseases of the Skin: Their Description, Pathology, Diagnosis, and Treatment, with Special Reference to the Skin Eruptions of Children, and an Analysis of Twelve Thousand Cases of Skin Disease. By H. RADCLIFFE CROCKER, M.D. Lond., Fellow of the Royal College of Physicians of London; Physician for Diseases of the Skin in University College Hospital, etc. Second Edition, with 92 Illustrations. London: H. K. Lewis: 1893.

WE had occasion on the appearance of the first edition of this work to speak in terms of high approval alike of its conception and execution, and this opinion is not in any degree modified by our perusal of the second. The care to omit no statement of value, exercised throughout, is manifest on every page, and the fact that the more important contributions to the International Congress of Dermatology, held at Vienna so recently as last September, are incorporated with the text proves that it is revised up to the latest possible date. The energy displayed during the last few years in dermatology has been extraordinary, rendering it no easy task to keep pace with the progress which is being made, especially as the literature is scattered through an ever-increasing number of periodicals. Yet nothing of consequence seems to have escaped Dr Crocker's notice, while the references are so full that it is easy to complete any brief allusion by looking up the original.

The etiology of skin diseases is all important, and seldom, if ever, has this part of the subject been more admirably and at the same time more tersely put. When treating of Vaccination as one of the events of life which might be supposed to have an effect, we find the following:—"The influence of vaccination occupies a large place in the public mind as an etiological factor in skin diseases, but only a very small one among medical men." And again: "Dentition is another process in early life which is much over-estimated as a cause of skin disease even by the profession, by whom it is too often set up as a 'bogey' for the ills of infancy. It has little, if any, direct influence, but there is doubtless a condition of unstable equilibrium just before the eruption of a tooth, in which the child is easily upset, and during which any skin disease present, such as eczema or urticaria, is likely to be aggravated."

The classification adopted is a convenient one, based in some degree on that of Hebra, modified to suit advances in knowledge and clinical convenience. A useful index to each disease is provided, by placing opposite the name the most prominent primary lesion.

Dealing with Passive Congestion, instances of a very curious phenomenon which is ascribed to this are given, where exposure to cold caused the appearance of purplish rings on the extremities, vanishing when the limbs became warm. But much more important is the affection called erythema induratum, attacking the calf more frequently than the shin. The nodules or plaques are more readily felt than seen, and may coalesce into large brawny infiltrations. They terminate either by absorption or by necrosis or sloughing, leaving an indolent ulcer which is suggestive of specific origin. Those most liable to it are strumous girls or young women, and mechanical causes, such as standing or cold, exert an influence, hence washer-women are frequent victims. Though rare in this country, it deserves attentive study. Erythema gangrænosum is stated to be a self-induced disorder, and is denied a place as a distinct disease. We are scarcely inclined fully to endorse this, and believe we have seen examples of an ailment which might be rightly so named. Peliosis rheumatica is classed with, though separately described from, the inflammatory erythemata.

A special point is made of noting the variations which occur in the course of any disease as a consequence of age at either extreme of life. This is a marked feature of the volume, and is particularly prominent in the case of Eczema, under which head a good description is furnished both of the infantile and senile forms. We were attracted by the following remarks on the cause of eczema, and offer no apology for reproducing them:—"The eczema patient is seldom in a state of well-being at the time of the supervention of eczema. Instead of the clear, ruddy complexion so often seen in psoriasis, a heavy expression, and pasty, or even earthy complexion, is the rule; the patient generally complains of something, sometimes only of 'being out of sorts,' has lost energy, or is no longer up to his work. One of the most common factors is an exhausted nervous system [the neurasthenia of American writers], whether from worry, anxiety, overwork either of mind or body, or from disease; indeed, eczema is almost like a parasite in the way it seizes on, and flourishes on the weak or vitally depressed, independently of the cause of the depression."

Another good feature in the volume is the care with which the diagnostic points are insisted on. At times, perhaps, the specialist comes a little too prominently forward, and in his desire to render discrimination quite accurate, the ordinary practitioner may find his mental vision blurred by the very elaborateness of the detail.

Taking up in order some topics which have struck us in course of our examination, the pathogenesis of pustular affections is now pretty well worked out, and there is a fairly general consensus of opinion that the staphylococcus pyogenes in one or more of its varieties plays a most essential part in their origination. While, then, the soil, the condition of the patient's skin, must be attended to from within, and all depressing influences removed, attention to local antisepsis will do more than anything to arrest the autoinoculation which perpetuates the disease, be this impetigo contagiosa, boil, or carbuncle. The mode in which this can best be carried out is fully detailed, the old-fashioned poultice being properly discarded as a powerful favouring agent. In discussing Zoster, Pfeiffer's theory that the groups of vesicles follow the distribution of the cutaneous arteries is rejected, the occurrence of the eruption in the course of several nerves being explained by the passage of some fibres of distinct nerves through one ganglion.

The varieties seen in cases of Lichen Planus are exceedingly well pictured, and will undoubtedly enable aberrant forms to be more easily recognised. At present, it must be admitted, there is still much to learn with regard to the diseases, very properly still separated, named pityriasis rubra pilaris, lichen pilaris, keratosis follicularis, keratosis pilaris and Darier's disease, lichen scrofulosus and lichen ruber acuminatus,—all of which affect, in a not very dissimilar manner, the hair follicles of the body.

An extremely valuable section is that devoted to the increasing class of eruptions due to contact with drugs or other irritants externally, or to substances administered internally. It would seem as if nearly all the more recently introduced remedies are apt at times, and in predisposed individuals, to produce rashes, varying more or less in type. Even those occasioned by the older medicines are not all yet thoroughly understood. That caused by intra-vaginal injections of corrosive sublimate solution, which has led to the suspicion of puerperal scarlet fever or septicæmia, is alluded to, but perhaps with scarcely sufficient detail. Besides the eruption caused by the ingestion of opium and morphia, a peculiar erythematous rash, associated with much pruritus, is occasionally encountered among those engaged in the preparation of the alkaloids from the crude drug. Few parts of the volume are of more general utility than those pages devoted to Dermatitis Medicamentosa. Eruptions in connexion with vaccination, though not special to it, are sometimes the source of anxiety to the parents and of trouble to the doctor. Their nature and the rules, through observations of which some at least may be avoided, are well laid down and described.

Under Molluscum Contagiosum and Darier's Disease the question of psorospermosis is considered so far as the state of our knowledge permits. Crocker notes the resemblance which the elementary lesions of the latter disorder bear to those characteristic of the former, and the drawings of a case of psorospermosis follicularis vegetans, exhibited by De Amicis at the International Congress of Dermatology of last year, were exceedingly like aggregated molluscum. As more cases come to be observed and recorded, a possible closer relationship may not unlikely be shown.

Scleroderma and Xanthoma are subjects which Crocker has made peculiarly his own, and both articles are full of information of value. Writing of diffuse symmetrical scleroderma, he remarks, under prognosis,—"Speaking generally, the disease tends to get well spontaneously, but it is impossible to predict how long any case may take; rarely less than twelve months is required for complete recovery. The swollen are much more favourable than the shrunken cases, and, in my opinion, those which are indurated from the first are more favourable than those which are œdematous, as they are less likely to become atrophic. As long as there is induration with distention, hopes of complete recovery may be entertained; when atrophy has set in, although, either as a result of treatment or spontaneously, the skin may get soft and mobile again in a few cases, it can only be after some years, and the subjacent tissues have then become so permanently damaged that more or less deformity and crippling remain." A case which has been for some time under our observation bears out the opinion expressed remarkably well, the improvement having been throughout steady, though gradual.

Lupus erythematosus is regarded as non-tubercular, though there are certainly some cases in which it approaches in clinical characters to lupus vulgaris. He holds it to be primarily an inflammation of the skin, especially predisposed to by a feeble blood-current; secondarily, there is microbic invasion of the disturbed epithelial layers, while in the acute infective form there is an additional infective element introduced into the system, and especially invading the lymphatics. Two rare varieties, one apparently undescribed previously, are included,—a telangiectatic and a nodular form. Crocker regrets the loose way in which the term tuberculosis of the skin is at present employed, in consequence of which it is sometimes difficult to know the variety referred to.

In discussing the etiology of Leprosy, climate has some influence allotted to it in determining the form assumed,—the tuberculated being more common in Europe, probably from the effect of cold checking the skin action, while non-tuberculated prevails in warm regions. The fish theory is looked upon as untenable, unless as acting the part of a possible intermediary host. Heredity is accepted to a certain extent, attention being drawn to the analogy with syphilis, the long incubation period in leprosy being taken into account. Contagion fails entirely to explain the transmission of the non-tuberculated form, if pus is the medium of communication.

Among the rarities of cutaneous medicine here to be found described are angioma serpiginosum, angiokeratoma, lymphangiectodes, and lymphangioma tuberosum multiplex, in which latter the author seems inclined to include the class of cases called under other names cystadenomata.

Whatever the nature of the bodies resembling psorosperms may eventually be proved to be, their value for diagnostic purposes is insisted on in the case of Paget's disease of the nipple, for according to Crocker their presence is constant in this, while they have never been found in eczema.

Seborrhœa, which has come lately so much into prominence, and is, indeed, a morbid condition of great importance, is shown to cover a far wider field than is ordinarily allotted to it. Besides the commonly recognised forms, Crocker adds a seborrhœic dermatitis and a seborrhœa eczema-formis, both of which correspond in a measure to Unna's seborrhœic eczema, though he does not accept the very wide meaning which Unna would attach to the term as employed by him. Under seborrhœa, too, he describes an inflammatory form which approximates psoriasis, and also the complaint called by some "flannel rash," by others lichen circinatus or marginatus.

The volume concludes with a valuable Appendix containing a clear account of the principal mineral waters useful in skin diseases and an extensive formulary. It is illustrated with many histological drawings, for the most part original, is admirably printed, and remarkably free from any typographical errors. It is undoubtedly the most complete treatise on Dermatology which has yet appeared, and reflects the highest credit on its industrious and competent author.

Cheyne-Stokes Respiration. By GEORGE A. GIBSON, M.D., D.Sc., F.R.C.P.E., F.R.S.E., Assistant Physician to the Royal Infirmary of Edinburgh, etc. Edinburgh: Oliver & Boyd: 1892.

READERS of this Journal have already had an opportunity of perusing and judging this elaborate monograph on Cheyne-Stokes respiration for themselves. Published before in parts, now in book form, the essay is seen to be well thought out and balanced. If we might take exception to one thing, we should say that the first or historical section is too long—occupying, as it does, more than half the book—while the division devoted to the clinical study of the "Symptom-Complex" is all too short. How the author, after adducing and considering the numerous theories as to the cause, comes to the conclusion, with Luciani, that it is without doubt due to a periodic variation in the functional activity of the automatic centre for respiration, we must leave to our readers, who will gain much from a careful perusal of a scholarly work.

Human Monstrosities. By BARTON COOKE HIRST, M.D., and GEORGE A. PIERSOL, M.D. Part IV. Philadelphia: Lea Brothers & Co.: 1893.

THE appearance of Part IV. marks the completion of this work, the first of the kind in the English language. The work as a whole is well done, and tends to remove to a large degree the reproach that the English-speaking race had nothing that could be called a representative work upon Teratology, whilst numbers of such were to be found in French, German, and Italian. The lack of interest in matters teratological which has prevailed in Great Britain and

America makes itself visible, however, in every page of this work, for the references, classification, and theories have nearly all a Continental origin. We are now justified in looking for a new order of things, for the publication of such an Atlas as this cannot fail to excite interest and stimulate research in this most interesting branch of pathology, and we may safely predict the appearance of other works upon similar lines by English-speaking authors. This, the fourth part, is occupied with the consideration of the Composite and Parasitic Monsters, and includes the description of the Tocci boys, the Rita-Christina, Marie-Rose, and Hungarian sisters, and the world-famous Siamese twins. In it are also considered the curious four-legged women (Blanche Dumas, Mrs B., and La dame a quatre jambes), and the boy Laloo and Ake the Chinaman. A bibliography of the most interesting papers that have appeared since 1880 is appended, and will no doubt prove useful to future workers. The printing, paper, and plates are those of an *édition de luxe;* and it is to this feature of the work alone that we take exception, for we feel that it is scarcely necessary, and it has, no doubt, added not a little to the expense of production and to the cost of a work which ought to be within the reach of all pathologists, biologists, and obstetricians. We congratulate Professors Hirst and Piersol on the successful completion of their undertaking.

An Illustrated Encyclopædic Medical Dictionary; being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences in the Latin, English, French, and German Languages. By FRANK P. FOSTER, M.D., Editor of the *New York Medical Journal*, with the Collaboration of WILLIAM C. AYRES, M.D.; EDWARD B. BRONSON, M.D.; CHARLES STEDMAN BULL, M.D.; HENRY C. COX, M.D., M.R.C.S., L.R.C.P.; ANDREW F. CURRIER, M.D.; ALEXANDER DUANE, M.D.; SIMON H. GAGE; HENRY J. GARRIGUES, M.D.; CHARLES B. KELSEY, M.D.; RUSSELL H. NEVINS, M.D.; BURT G. WILDER, M.D. Vol. III., with Illustrations; pp. 1544–2320; Fas—Min. London: Sampson Low, Marston, & Co., Limited. New York: D. Appleton & Co.

WE have again to congratulate the editors and publishers on the completion of another volume of this stupendous work of reference. The collateral sciences have been interpreted most liberally, and every term in Botany, Chemistry, Physiology, and Anatomy that can possibly be related to medical science is not only defined, but in many instances admirably described, and the equivalent given in the four great languages of the world. The pronunciation of each word and its accentuation are given with great care. For accuracy, fulness, and admirable arrangement this great work seems faultless, and when it is complete it will be a feat of industry and patience of which its owners may well be proud. No great library can afford to be without it.

Aberdeen Doctors at Home and Abroad. By ELLA HILL BURTON RODGER. Edinburgh and London: William Blackwood & Sons: 1893.

MRS ELLA BURTON RODGER is to be congratulated on the happy idea which has enabled her, in this book, to present to us a long succession of men of our profession, an unusual proportion of whom are really remarkable; and in a way that admits of the introduction of collateral matter in the shape of information and anecdote of social habits and customs, which makes her large volume most entertaining reading. Somebody has remarked that human nature is the same all the world over, especially in Aberdeen; and it does seem as if the qualities commonly attributed to Scottish human nature exhibit a very special development in that northern region. Industry and resolute self-denial, joined to native ability and hard-headedness, find their reward in success at home and abroad; and these Aberdeen men not only remembered their birthplace with tenacious affection, but endowed her from time to time with substantial benefits.

Mrs Rodger will not quarrel with us for assuming that inherited instinct, coming to her from her distinguished father, John Hill Burton, the Historian of Scotland, sent her to ransack the records of old Aberdeenshire families, from which she has gathered many illustrations of old-world practices which serve to show how long it was before rational medicine displaced fantastic notions and absurd traditions. The prescription of "hog's lice, live snails, cow's dung, crab's eyes, bluebottles," etc., etc., by an "eminent physician" whose collection of receipts was presented by Lord Bute to Marischal College in 1752, is truly gruesome in suggestiveness; but it is very curious to find, at a still earlier period, an enlightened permission by a certain Barclay of Ury to his physician, Dr Robertson of Aberdeen, "if he pleases for his own satisfaction and experience to open and see the cause of my death, he may." The customs with regard to bleeding are illustrated by a quotation from a country newspaper, relating that a gentleman had broken his leg, but fortunately a doctor was at hand, who bled the patient on the spot, etc. In these times, the line which separated the profession from trade was not clear, and we read that not only did the doctor charge highly for his drugs, and advertise them freely, but that he even occasionally supplemented his income by keeping a tavern.

Mrs Rodger takes the history of the rise and fortunes of the Aberdeen Medical Society as the central point of that portion of her book which treats of medical education in Aberdeen. Initiate in 1789, on the model of the Edinburgh Medico-Chirurgica

Society, by James M'Grigor and James Robertson on their return to Aberdeen after a year spent in Edinburgh, this Society came gradually to include in its membership not only men of local origin and celebrity, but, as honorary members, a large number of the most eminent medical men of Edinburgh and London. Mrs Rodger avails herself of the opportunity thus afforded to give a large number of interesting and amusing personal sketches, which are really the chief feature of the book. Amongst these, perhaps the most notable figure is that of Sir James M'Grigor, above mentioned. Whilst having in marked degree all the ordinary qualities of an Aberdonian Scot, M'Grigor added to these a ready tact, and a habit of conciliation and consideration for others which do not always accompany the more solid endowments, and which counted for much in his long and varied career. When Lord Wellesley requested to have sent to him in Portugal "the most active and intelligent person that can be found to fill the place of Medical Inspector-General," the Duke of York sent M'Grigor, characterising him as "one of the most industrious, able, and successful public servants he had ever met with;" and this opinion was fully justified in Wellesley's experience. Few men have done so much to raise the position of the army surgeon, and Sir James M'Grigor's history is as inspiring a record as can be found of an admirable, successful, and happy life. Dr Milne of Bombay, who founded the first, and till recently the only Medical Bursary in Aberdeen, and Dr Neil Arnot, who founded prizes for Physical Research in Edinburgh and Glasgow as well as in Aberdeen, are also very vividly presented; and we are sure that readers will thank us for sending them to the book itself, where they will find a large assemblage of portraits rich in interest and in amusement.

As the subordinate title of her book Mrs Rodger takes "The Narrative of a Medical School." She tells us of the old "Mediciner Monk" of King's College, with his herb garden; and of the first Principal of Marischal College (founded 1592), who was required, besides being well versed in Scripture, to instruct in Hebrew and Syriac, and to teach Physiology from the Greek text of Aristotle, "to which he shall add a short explanation of Anatomy." We find, as time goes on, a Professor of Medicine in Marischal College who taught Oriental languages in addition. Then comes a Professor of Chemistry; but a large part of the teaching seems to have been done in the Medical Society, on the mutual improvement principle, when that body had taken shape. Many Aberdeen students went to Edinburgh, or abroad to Leyden or Paris, to complete their medical education.

Of the later development of the Aberdeen Medical School, and of how it has grown to its recent numbers, not much is to be found in Mrs Rodger's pages. Her aim has been more to deal with the past, and with the numerous interesting personalities to whom she introduces us. The book, as a whole, embodies in attractive form a great amount of valuable material which is in no other way accessible, and the thanks of, we trust, a large circle of readers are due to Mrs Rodger for her patient labour, and for the zest and appreciation she has shown in rescuing from oblivion so many men who have deserved well, not only of their city, but of their country. We should not fail to remark, as among the fitness of things, that Mrs Rodger has the double qualification for undertaking to write such a book of being not only the daughter of a historian, but of being herself the wife of a well-known Aberdeen doctor.

Recollections of Dr John Brown, author of "Rab and His Friends," etc., with a Selection from his Correspondence. By ALEXANDER PEDDIE, M.D., F.R.C.P. Ed., F.R.S.E. London: Perceval & Co.: 1893.

EVERY reader of this Journal will remember the interesting Harveian oration of 1890 delivered by Dr Peddie in memory of his great master and friend James Syme, and of his lifelong friend and "the beloved physician" John Brown, which adorned our pages in May and June 1890. The little book now under review is an enlargement of this address, in so far as it relates to Dr John Brown. In its new form it is enriched with many delightful letters and one or two woodcuts of the inimitable pen-and-ink drawings of dogs which "Rab" knew so well to describe by pen and pencil. The older members of the profession in Scotland know with what touching loyalty of friendship Dr Peddie loved and worshipped his lifelong comrade, and will find in this little book the story told with a very loving hand. Nearness has not destroyed the sense of proportion, and the story so lovingly told is not too long. The bits of Brown himself are admirable, and some of the notices of his friends, especially of Thackeray, are new and valuable. A critic might here and there find traces of mosaic work overlapping, and even ill-fitted, when the original paper and its additions have been joined; but no one who takes up this little book will willingly lay it down till he has finished it, and every gentle reader will be able to recognise and reverence the love and loyalty of the old friend, still spared to us in a most fresh and green old age, for the lifelong comrade and companion to whom he was more than a brother in many an hour of ill-health and depression.

The Medical Annual and Practitioner's Index. Bristol: John Wright & Co.: 1893.

THE eleventh volume of this excellent publication maintains its general high standard of usefulness. It aims at presenting its readers with a complete report of the progress of medicine all over the world; and does so, not only by giving extracts from medical journals, but also by providing summaries and original articles by British, American, and Continental writers who rank as authorities on the subjects of which they treat.

The book is divided into three parts. Part I. is introduced by an article on "The Present Status of Therapeutics" by Professor H. A. Hare of Philadelphia, and contains notes of the characters and properties of all the most important new remedies.

Part II. occupies the greater part of the volume, and constitutes a Dictionary of New Treatment, Medical and Surgical. Many, especially of the surgical articles are illustrated, and all seem well written and up to date. The subject of Cholera occupies, appropriately, a considerable space; and we have articles on its prevention and treatment by Sir Geo. Johnson and Mr Macnamara, and interesting accounts of last year's epidemic in Hamburg, Russia, and Kashmir, by Drs Reiche, Sisley, and Mitra respectively.

Part III. contains a miscellaneous collection of articles on subjects of interest to medical practitioners. It begins with a review of the progress of Sanatory Science in 1892, by Dr Joseph Priestley of Leicester, and next is one on the progress of Pharmacy. These are followed by a list of the Lunatic and Idiot Asylums and of Homes for Inebriates and others, and another of the Medical Books of the past year. There is also an Official and Trade Directory, and various other pieces of useful information.

The Asclepiad: A Book of Original Research and Observation in the Science, Art, and Literature of Medicine, Preventive and Curative. First Quarter, 1893. No. 37, Vol. X. By BENJAMIN WARD RICHARDSON, M.D., F.R.S. London: Longmans, Green, & Co.

THIS is one of the most interesting and original of the medical periodical. Its versatile author edits himself with much skill, and gives his readers a varied and attractive programme from quarter to quarter. This number contains a sketch of Darwinian medicine, and of the life, character, and works of Erasmus Darwin—the grandfather of the still more famous Charles Darwin—which is replete with information and a discerning criticism. It is, however, disfigured by an extraordinary printer's error, repeated at least nine times, "Zoonomia" being always printed "Zoon*a*mia," with a fine disregard of its derivation.

An article on the treatment of disease without alcohol was originally delivered as a lecture before the British Medical Temperance Association. It may have comforted the hearers. It will not, we think, convince the profession, either by its arguments or by the recorded results of treatment. An admirable semi-popular article on Railway Travelling and Health ought to be read and pondered both by railway travellers and railway directors.

The *Opuscula Practica* are, as usual, full of interest and practical value.

The Medical Magazine. Nos. 9, 10, 11. London: Southwood, Smith, & Co.

THIS magazine maintains the high standard of literary ability and scientific interest and value with which it set out. Notably we may refer to most interesting biographical sketches of three Guy's physicians,—Moxon, Fagge, and Mahomed; to a most appreciative notice of the late Dr James Anderson; a delightful classical paper on Medical Epigraphs in the British Museum; to a continuation of the valuable Studies in Infant Mortality called the "Massacre of the Innocents;" and to an admirable article on the Parish Council from a Sanitary point of view.

Transactions of the American Gynecological Society, Vol. XVII., for the Year 1892. Philadelphia: 1892.

THE yearly volume of the American Gynecological Society shows no falling off either in the interest or in the value of the papers which it contains. It is to be noted, however, that some of them have, we think, already appeared elsewhere, and this remark applies to what is probably the most noteworthy communication in the book —that, namely, on "Tuberculosis of the Female Generative Organs," by Dr J. Whitridge Williams. Dr Williams' paper, which appeared in the *Johns Hopkins Hospital Reports* (vol. iii.), is noticed below. Of the other papers, those of Harris (on "Antiseptic Symphysiotomy"), of Grandin (on "Accouchement Forcé"), of Boldt (on "Vaginal Hysterectomy for Cancer"), and of Palmer Dudley (on "Umbilical Hernia in the Female"), are all worthy of perusal.

The Johns Hopkins Hospital Reports. Volume III. Report on Pathology, II. Baltimore: The Johns Hopkins Press: 1892.

THIS number of the valuable *Johns Hopkins Hospital Reports* contains two very interesting and exhaustive monographs by Dr J. Whitridge Williams. One is on "Papillomatous Tumours of the Ovary," and embraces the consideration of the ordinary papillomatous cystomata in which the papillary growths are found inside the cysts, as well as that of the cases in which the formation of the growths is confined to the surface of the ovary, the superficial papillomata. Dr Williams discusses the possible modes of origin of these growths, and comes to the conclusion that they are derived either from the Graafian follicle or from ingrowths of the germinal epithelium into the ovarian stroma. He believes that the superficial papillomata always originate in the latter manner. The other monograph is upon "Tuberculosis of the Female Generative Organs," a condition which has lately attracted much attention. Dr Williams describes nine cases of this kind, and proves that every portion of the genital tract may be affected, the order of frequency being tubes, uterus, ovaries, vagina, cervix, and vulva. He considers the occurrence of infection by coitus as very probable, although it has not yet been absolutely demonstrated. The symptoms are not characteristic, the prognosis is always grave, and whilst the disease is usually secondary to tuberculosis elsewhere, in a considerable number of cases it primarily affects the genitals. The work is well printed and beautifully illustrated, and reflects great credit upon the author.

The Leeward Islands Medical Journal. Vol. II. Edited by H. A. ALFORD NICHOLLS, M.D., etc. London: J. & A. Churchill: 1892.

WE welcome this second volume of the *Leeward Islands Medical Journal.* The Branch of the British Medical Association is to be congratulated upon the good work they have done, and also upon this valuable publication. All the papers published are of interest, the outstanding ones being—"Remittent Fever," by Drs Boon and Mapleton; "Bilious Remittent Fever Cases," by Dr M'Hattie; and "Chyluria," by Dr Freeland. We notice with pleasure that Sir W. Haynes Smith, the Governor of the Colony of the Leeward Islands, has enabled the publication of these reports, and we hope that his action will be followed by other colonial governors. Medical men do much for the State; it is satisfactory when the State recognises the fact, and by a little courtesy and generosity stimulates the profession to still greater service.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXXII.—MEETING VI.

Wednesday, 1st March 1893.—MR JOSEPH BELL, *President, in the Chair.*

I. ELECTION OF MEMBERS.

The following gentlemen were elected Ordinary Members of the Society:—A. M. Stalker, M.A., M.D., 40 Nethergate, Dundee; James Harvey, M.B., C.M., 1 Leopold Place, Edinburgh.

II. EXHIBITION OF PATIENT.

Mr Cotterill showed a patient, a girl of 11, with a congenital deformity of both forearms, consisting in an ENTIRE INABILITY TO

SUPINATE. The forearms were fully pronated, and the hands could only be turned round by a movement at the shoulder-joint. The radius and ulna were small, and there was an absolute stiffness of them, so that they could not be moved in a supinating direction. The head of the radius was displaced towards the middle line. The supinator and extensor group of muscles were fairly developed. The wrist was very small, evidencing distinct atrophy of the bones. The only other structural peculiarity was the presence of a very highly arched palate. Patient was mentally weak. There was a history of cross birth and of considerable difficulty in delivery, but none of any injury at the time.

The President said the case was certainly a rare one. He thought it was just possible that there might have been a simultaneous fracture at birth on both sides. Supination might afterwards in consequence have been lost.

III. EXHIBITION OF INSTRUMENT.

Dr Lundie showed an apparatus for INTESTINAL INSUFFLATION. It consisted of a gasogene, with a suitable tube attached. It was charged in the usual way, except that only so much water was introduced as could readily be passed into the upper globe. Only gas, therefore, came out when the stopcock was opened. He had found the apparatus do great service in two cases of intussusception. He thought that probably the rapidity with which the insufflation was effected might have an advantage comparable to that of taking the muscles unawares in reducing a dislocation.

IV. ORIGINAL COMMUNICATIONS.

1. *Mr John Duncan* read his paper on THE SURGICAL TREATMENT OF GALL-STONES, which appears at page 1081 of this Journal.

2. *Mr Rutherford Morison* read his paper on SOME MISTAKES IN THE TECHNIQUE OF ABDOMINAL SURGERY, which will appear in a future number of this Journal.

A discussion upon both papers followed.

Mr Caird said that with regard to what Mr Morison had said about Trendelenburg's position when exploring the pelvis, he would like to know if he used a special table, and if, when the pelvis was raised, there was in his experience any difficulty with the patient's breathing. With regard to operating upon a patient when there was intestinal obstruction and the patient was rather collapsed, there were undoubtedly then special dangers when an anæsthetic was administered. The patient was apt to vomit, and choke from the vomited matter passing into the larynx and trachea. He had seen four cases that gave trouble in this way. He doubted if washing out the stomach was worth the trouble, as severe peristalsis of the intestine soon refilled it. Careful administration of the anæsthetic was in such cases specially important. The patient should not be allowed to get out of the anæsthetic, and a gag should be ready to use if the patient should vomit. When a patient was in this collapsed condition, undoubtedly the administration of chloroform made the pulse become still weaker. One might begin with chloroform, and after the patient was under, use ether. He believed, however, that more might be done with cocaine in these cases than was done at present. He related his experiences of a case of gastrostomy that had been performed in this way. The peritoneum in this case was remarkably insensitive. The patient permitted free handling of it, and pulling over of the stomach for examination. In three cases of typhlitis operated upon under cocaine, everything was managed with great ease, except in one instance, in which, whenever they got down to the peritoneum, the patient complained of some pain. They then tried the sensitiveness of the peritoneum by touching it with a probe, and they found that the patient was not aware when they touched it. In several other cases he had also found the peritoneum to be insensitive. On one occasion, when opening an abdomen for the purpose of exploration exactly in the middle line below the level of the umbilicus, cocaine having been injected, the patient felt absolutely no pain; but when the peritoneum was exposed, the moment the peritoneum was seized with dissecting forceps the patient complained of severe pain, which he referred to the point of the penis; and on incising the peritoneum the same pain in the same locality was complained of, but locally there was no pain at all. He thought that in many instances they could use cocaine, relying upon this, that with it they got through the sensitive skin, and that the handling of the peritoneum was not painful. Aggravation of a collapsed condition was thus avoided. The instruments that Mr Morison had handed round were, he thought, extremely interesting. He had listened with the greatest interest to his paper. Those of them who had had any experience of collections of pus in the peritoneum would agree with Mr Morison that it was better not to break down adhesions and run the risk of general peritonitis.

Mr Cathcart said he would like to add his words in favour of the admirably practical paper Mr Morison had brought before them. In speaking of his method of suturing the abdomen in three stages, he had stated that he believed that the peritoneum healed so much more readily that one often saw suppuration in the stitches, but not in the peritoneum. He (Mr Cathcart) thought there was another explanation for this. The source of the suppuration in such cases was not from without, but rather from the deeper layers of the skin. The irritation of the stitch determined the suppuration in its track. It was an additional reason why one should not carry the stitch through the skin to the peritoneum. He thought Mr Morison's plan was a useful one, but he did not mention what kind of material he used for the stitches. Chromic gut would be necessary for the muscle, otherwise they would not get sufficiently long apposition.

Mr Morison explained that he used silk, and left it permanently.

Mr Cathcart, continuing, said he was very much interested in Mr Caird's remarks about the non-sensitiveness of the peritoneum. A distinguished abdominal surgeon had not very long ago been insisting upon its extreme sensitiveness. With regard to Mr Duncan's paper, he was rather struck by his statement that when the common bile duct was obstructed there was not the same amount of distention of the gall-bladder as there was when the cystic duct was blocked. There was in the College of Surgeons' Museum the largest gall-bladder he had ever seen, and it was from a case of obstruction to the duct just at the duodenum. He had also seen Mr Lawson Tait operate upon a case of obstruction in the common bile duct in which there was great distention of the gall-bladder. It was difficult to see why the gall-bladder should not become distended when the obstruction was below the cystic duct, and that it should be distended only when the obstruction was in the cystic duct. Mr Duncan had not alluded to a point which had been mentioned by some, that when the gall-bladder was distended it always took a definite direction towards the umbilicus. He himself had not had sufficient opportunities for judging of the point.

Mr Cotterill said that he agreed with Mr Morison about not being too careful of opening the abdomen in the middle line. He made a point almost of not doing so. If he did strike the middle line, he made sure that he got a broad muscular surface on each side to bring together. He also agreed with what Mr Morison had said about shock. For some years he had used in any operation entailing shock a square tin, which was put upon the operating table, and filled with water of a sufficient heat to keep the patient's temperature suitably elevated. There was one point upon which he had a heterodox opinion. He was beginning to have a very holy horror of opium in abdominal technique. He had a suspicion that something analogous to what they knew happened in cholera might happen in peritonitis. In the case of the guinea-pig one could not produce cholera without giving opium. He thought they had been on the wrong tack in giving opium. Opium was given in a routine way to prevent pain, and not only did it obscure symptoms, but it also, he believed, put the patient in a worse position. He was aware they were between two stools. They had the difficulty of intense pain, but they had the more serious difficulty of danger to life in using opium. Without going so far as to give purgatives with a free hand, he must say that in late years the only successful cases of recovery from what seemed incipient general peritonitis were cases in which he purged early. If one could catch the cases before distention had occurred, he believed in holding one's hand with regard to opium, and giving purgatives instead. If the patient got his intestines distended and paralysed, the time for opium had begun, and that for purgation had passed. He would like to hear what Mr Morison had to say upon this point.

Dr T. Burn Murdoch said he remembered a case where there was in a lady advanced in years intense jaundice with a much distended gall-bladder extending to the umbilicus. The patient was operated upon, and a clear viscid fluid in the gall-bladder was all that was found. Within forty-eight hours afterwards bile flowed freely from the fistula that was formed, and continued to flow until her death, fourteen days after operation. At the post-mortem no gall-stones were found, but a fibrous indurated thickening at the entrance of the common duct into the intestine. He would like to ask if any of the members could give their experience of the treatment of gall-stones by manipulation, which had been written about by Dr Harley of London, and if they had found any benefit accruing from it. He had tried it in a good many cases, but had quite failed to get any good result.

The President referred to his own experience of the manipulative treatment of gall-stones, and said he was some time ago called in consultation to an old woman who was very far through indeed, with a large gall-bladder and several gall-stones which could be felt. He pressed to be allowed to operate, but was not permitted to do so. It would have been a good case for operation. The gentleman in charge of the case had read Dr Harley's pamphlet, and he tried the manipulative method, and succeeded in getting rid of several gall-stones, which appeared in the stools. A repetition of the massage on a later occasion was followed by an attack of peritonitis which proved fatal. He asked some of the physicians present to give their experience of the medical treatment of gall-stones, especially with regard to the use of olive oil, which had been so strongly recommended.

Dr Affleck said he had used olive oil in gall-stones, but had not seen any good result. There was often great uncertainty in the diagnosis of gall-stones, especially of impacted gall-stones, the symptoms of which were often simulated by other conditions, such as a neoplasm at the mouth of the common duct. The frequent co-existence of malignant disease with gall-stones was always to be remembered. In the treatment of gall-stones the physician certainly owed a great deal to the surgeon, and they were now often able to deal satisfactorily with conditions that before were regarded as hopeless.

Dr William Russell referred to the case of an old lady who was seized with symptoms of intestinal obstruction, with pain referred to the left side of the abdomen. They could not make up their minds as to the cause of the obstruction. The case occurred at a time when surgeons were not so ready to open the abdomen as they were now. The patient died, and there was afterwards found in her small intestine, exactly under the place where the pain had been referred to, a stone, which he had no doubt was a gall-stone. It completely blocked the intestine. The gall-bladder was entirely absent, and represented by a mass of fibrous and cicatricial tissue. Some eighteen months before, the patient had had a severe attack of biliary colic. The stone must have lain in the duodenum and increased in size by foreign matter gathering round it. Within the last few years he had had a patient, a young woman, who suffered from repeated attacks of biliary colic. She had all the ordinary symptoms. Accompanying one attack she had profuse hæmatemesis. Unfortunately no search was made for a gall-stone, but from that time she had no recurrence of the attacks. He thought in both of these cases the stone had ulcerated from the cystic duct or from the gall-bladder into the duodenum. He showed a spirit specimen of impacted gall-stones in the gall-bladder, as illustrating the probable condition present in the cases to which he had referred.

Mr Morison, in replying, said that with regard to Trendelenburg's position, he fixed the patient's feet to the legs of the table, and tilted the foot of the table on a couple of chairs. He had not had trouble from the patient's having difficulty of breathing. He thought it was not a dangerous position. With regard to Mr Cathcart's question, he repeated that he used silk for both ligatures and sutures. In the case he mentioned, in which the bladder had to be sutured, he had also used silk, passing it through the muscular and peritoneal coats. Mr Cathcart had raised a question about suppuration of the peritoneum. In the case alluded to the suppuration was not stitch suppuration. It was not in connexion with the sutures, but with the wound, showing fouling of the wound itself. Dr Affleck, in discussing Mr Duncan's paper, had spoken of the frequent difficulty of diagnosing between cases of gall-stones and malignant disease. He had seen at least two cases in which more than one surgeon had had his hand in the abdomen, and each was positive that there were stones in the duct as it passed through the lesser omentum. The patients died, and at the post-mortems malignant glands were found in the omentum. He was quite sure that Mr Duncan's statement that blocking of the common duct did not necessarily cause dilatation of the gall-bladder was correct. Mr Duncan had not mentioned the frequency of hæmorrhage in cases of chronic jaundice. He had seen three cases in which death occurred from slow oozing into the peritoneum from the wound after operation. He also mentioned a case he had seen in which probably the common duct was ruptured into the peritoneal cavity during the extraction of a stone from it with forceps. The accident was not recognised at the time. In a few days the abdomen was full of fluid, which was found to be pure bile. The patient had some peritonitis, but not much. In another case, after a man had been drained for some days by the gall-bladder, suddenly the bile ceased to flow. Abdominal swelling followed, and the abdomen was opened. It was found to be full of bile. The abdomen was washed out and drained. The patient recovered, as did also the previous one.

The President expressed the thanks of the Society to Mr Morison for coming such a long distance and reading his interesting paper.

Mr Duncan said that the point Mr Cathcart had raised as to the size of the gall-bladder in obstruction to the common or cystic duct was one that was by no means decided. He merely wished to record his own impression, from what he had seen, that as a rule the gall-bladder was small in obstruction to the common duct, and large in obstruction to the cystic duct. He admitted that there were cases in which obstruction to the common duct was accompanied by distention. He merely wanted to bring out what was apparently the common result in these forms of obstruction, and therefore one means of diagnosis. It was not pathognomonic. He believed that in almost every case recorded in which a large gall-bladder had been opened, the fluid obtained from it was mucus, and not bile. He thought that Mr Morison's experience was perhaps largely drawn from ovarian cases, or cases of a similar character, and that he was inclined, therefore, to attach too little importance to shock. A very large number of the cases that the ordinary, as distinguished from the gynæcological, surgeon met with were cases in which operation was performed as the patient's last chance. A large number of these abdominal cases, when taken off the table, were in a state of great exhaustion, and means of resuscitation were successful only for a time. The patients frequently sank about twelve hours afterwards. He had tried a great many methods to bring them right. He had tried transfusion of saline solution, but had come to the conclusion that it merely rallied the patients for a time. The injection of blood, which he had also tried, seemed to have only a similar effect. It resulted in the patient lasting an hour or two longer. In his experience, massage in the treatment of gallstones was exceedingly painful. He thought the practice was a dangerous one. In none of his cases had hæmorrhage occurred, but undoubtedly such had been reported by others.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

April 26, 1893.—Dr Robert Pollok, *President, in the Chair.*

Dr M. Cameron showed a PLACENTA from a case of placenta prævia which he had had that evening. He had turned and delivered the child through the placenta. He also showed a large CALCIFIED FIBROID.

In opening a discussion on the TREATMENT OF FIBROID TUMOURS OF THE UTERUS—

Dr Cameron said that for some time opinions had been divided between electrolysis and operation. He had given electrolysis a fair trial both in private and hospital work. The cases it did most good in, he believed, were not fibroids at all, but indurations about the uterus. In the true myoma the curative action was very small. As a styptic the action was undoubtedly good, and he believed the electricity also acted as a tonic to the whole system. In weak patients this action was very useful in strengthening them so that they might be able to have an operation performed. He described the three varieties of fibroids,—submucous, interstitial, and subserous. In the subserous, pressure symptoms often made an operation necessary. He was against removing the uterus along with the tumour, as he believed the results in these cases were far more unsatisfactory than statistics would lead one to anticipate. In the interstitial variety hæmorrhage was what we had most frequently to deal with. In these cases electrolysis was useful as a styptic and tonic, and if that did not check it, along with the use of ergotin, the best operation was to remove the ovaries and as much of the tubes as possible. If, on making an exploratory incision, he found the ovaries and tubes very adherent, he preferred leaving them alone. The submucous ones were sometimes very puzzling. If they were about the size of an orange, they were usually attached to the cervix, and were easily diagnosed. If larger and blocking the vagina, it was very difficult to distinguish them from the inverted uterus. If you could rotate the tumour in the vagina, you could be sure it was a fibroid and not the uterus. He had been able to diagnose one in that way. The submucous and subserous sometimes degenerated. The one he had exhibited at the beginning of the meeting was quite calcified in parts. He had removed it by abdominal section with great difficulty. He instanced one case in which there had been 47 applications of electricity, with the result that the tumour had sloughed, and the woman was very ill with septicæmia. The operation of removal seemed almost hopeless; but she wished it done, and he had managed to remove it piecemeal by the vagina. She was very low, but had made a wonderfully good recovery, and was now in good health. In another case the foul discharge had led to the diagnosis of cancer. He dilated the cervix and removed it by the vagina at three sittings. She made a good recovery. Ergotin he had found a very useful drug in checking hæmorrhage. He could not speak in favour of bromide of potassium.

Dr Stark said the treatment often depended upon the social position of the patient. If a woman was in a position to rest at her periods, she usually got on well enough with the use of ergot, etc., but in the case of a poor woman who could not do this, operation had more frequently to be resorted to. He knew of many cases getting on comfortably with care. One case he had known, where the tumour was small, and giving very little trouble, but unfortunately she had been seen by a man who advised and performed an operation, which proved fatal. One case of his own, in which there had been a fibroid for twenty years, was now quite free from it, as it had entirely disappeared at the menopause. The rate of growth should be carefully watched. He showed a large tumour, weighing 2¼ lbs., which he had removed by the vagina. It had existed for fourteen years, but had only given trouble for a few months from profuse menstruation. It had completely filled the vagina, but he had managed to pass an écraseur round the pedicle.

Dr H. St Clair Gray remarked that in the red or soft variety the hæmorrhage usually persisted, while the white or hard decreased at the menopause. A great deal could be done in controlling the hæmorrhage by giving ergot in large doses for a long time. Hamamelis he had tried, but had not found it so good as ergot. Cauterizing was also of use. The knife should only be resorted to after a fair trial of medicines. He believed the operations would be more successful if we could treat the stump intra-peritoneally.

Dr Cullen said great patience was required in the treatment. He had never seen any good from electrolysis. He could not see how it acted as a tonic, as its application always caused more or less shock to the system. Ergot he did not think could safely be used for a long time. He had usually found the hæmorrhage return more profusely after its use.

Dr Tod related a case in which menorrhagia had been profuse for seven years. Under ergot she rapidly improved in health, and gained flesh. He thought it was much better not to operate except as a last resort.

Dr Richmond believed strongly in ergot given freely, and for a long period.

Dr Brown related a case he had seen in consultation, where a large tumour obstructed delivery. A dead child was delivered with great difficulty, and the mother died twelve hours later. At the post-mortem the tumour was found attached to the posterior part of the cervix, and it overtopped the uterus. There was no history of any previous trouble from the tumour. The tumour and uterus were now in the Royal Infirmary Museum.

Dr Pollok said he would have liked to have heard some statistics as to the mortality of operations. He had seen many cases, but had never advised operation. He believed in ergotin for checking hæmorrhage, and would not advise operation unless life were threatened.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

Crystals upon the Skin, following the Use of Salophen.—Crystalline deposits upon the skin, following more or less profuse perspiration, have only been seen in cholera typhoid; but Dr Drasche (*Wiener Medizinische Wochenschrift*, No. 29, 1892) gives a brief account of their appearance after the use of salophen. In using salophen there is often a profuse perspiration, which leaves behind it, after evaporating less than half an hour, a quantity of small, graceful, pointed crystals. They glimmer and flicker and glisten, in a good light, until some parts of the skin appear to be sprinkled with diamond-dust. Besides the folds at the elbows and interphalangeal joints, the palm of the hand and the creases of the neck, especially in stout people, are filled with a white shining substance resembling asbestos. Although these deposits of crystals may be observed on all parts of the body, they are especially marked on the face, neck, breast, and both sides of the upper and lower extremities. They are found in smaller numbers in places more exposed to rubbing, as the back. They are seen best in a strong oblique illumination. In all cases where perspiration has followed small or large doses (½ to 2½ drachms per day) of salophen there also occurs this crystalline deposit upon the skin. As it always follows like doses, nothing can be said of cumulative effects. These tiny crystals can be gathered best with a thin, small knife-blade, and then they should be placed under the microscope upon a slide without any cover-glass. The microscope shows them to be almost of the same form as the salophen crystals. Their chemical nature has not yet been fully determined, on account of the difficulty in obtaining a sufficient quantity for examination. Probably these crystals are salophen itself as a product of its subdivision.—*Therapeutic Gazette*, March 1893.

Tasi as a Galactogogue.—E. del Arca and J. Sicardi (*Siglo Med.*, March 5) speak highly of the galactogogue properties of tasi or tasis (*Morrenia brachystephana*), one of the Asclepiadeæ, a native of the Argentine country. The leaves and the root (fresh or dry) are used as an infusion, and the fruit as a decoction. Thirty grammes of tasi root are infused in 200 grammes of water; this amount may be taken in tablespoonfuls in the course of the twenty-four hours. A decoction of 40 grammes of the fruit in 20 grammes of water can be taken in the same way. The preparation is nauseous when swallowed, and leaves behind a disagreeable, bitter taste. Among fifteen women, from 20 to 40 years of age (three primiparæ, and the rest multiparæ), suffering from insufficiency or total want of milk, tasi gave satisfactory results in eleven, in two the effect was doubtful, and in two *nil.* The length of time that had elapsed after delivery did not appear to have any effect on the rapidity with which the secretion of milk was restored.—*British Medical Journal,* March 18, 1893.

COCAINE AND THE MILK SECRETION.—Guénel (*Gaz. Méd. de Nantes,* February 12) reports the following observations:—In treating a case of cracked nipple with a 1 in 50 solution of hydrochlorate of cocaine, he found that the secretion of milk was stopped by the application. The breasts became flaccid, and the nipples lost their erectility. The functional activity of the breast was restored on discontinuing the use of cocaine.—*British Medical Journal,* April 1, 1893.

ETHYL CHLORIDE.—Gaus (*Therap. Monats.,* March 18, 1893) has used ethyl chloride, produced by the action of hydrochloric acid on alcohol, as a local anæsthetic with great success. For preserving the fluid, which boils at a temperature of 10° Centigrade, he recommends the use of glass tubes which contain about 2½ drachms. One end of the tube is drawn to a point, which can be broken off when the warmth of the hand holding the tube is sufficient to cause ebullition and the emission of a steady fine stream of ethyl chloride, one tube generally being found sufficient. The author cites most obstinate cases of neuralgia, lumbago, and migraine cured by one or more applications of the chloride, and he believed that in three cases he was thereby enabled to cut short commencing attacks of gout. The skin is first reddened and then turns perfectly white, a snowy covering forming on its surface. No disagreeable odour is produced, and no unpleasant symptoms were observed in any of the author's patients. In a rabbit exposed to frequent successive sprayings the skin showed no pathological changes, and a subcutaneously-introduced thermometer marked a diminution of 15° to 18° Centigrade.—*British Medical Journal,* April 8, 1893.

ANTIPYRIN AS A LOCAL ANÆSTHETIC IN THROAT AFFECTIONS.—Neumann (*Pesth Med.-Chir. Presse,* No. 3, 1893) has obtained very good results with 35 to 50 per cent. solutions of antipyrin when employed as a local anæsthetic. Physiologically a temporary hyperæmia, followed by anæmia with anæsthesia, is induced, the latter being not so profound as that following the use of cocaine, but producing a more prolonged effect. In practice, an equal quantity of antipyrin and starch was used as an insufflation in the patients suffering from painful perichondritic affections of the larynx. The more lasting relief which it gives, its innocuousness, and its antiseptic properties, recommend it as against cocaine; and it was observed that its effects do not diminish after repeated applications, as is the case with the other drug. Its antipyretic properties supply additional grounds for its use.—*British Medical Journal*, May 13th, 1893.

Petroleum in Diphtheria.—Flahaut (*Normandie Méd.*, No. 3, 1893) gives particulars of an epidemic of diphtheria at Neuville, Champ de Dissel, in 1891-92, in the course of which 70 persons were attacked. He divides the cases into two series:—(1), 30 cases (between April 15th, 1891, and May 5th, 1892) treated by the methods in common use, with the result that 9 died and 21 recovered; (2), 40 cases (between May 5th and June 15th, 1892) treated by applications of petroleum, without a single death. The nature of the disease was clearly established by clinical as well as bacteriological evidence. The method presented no difficulty, and is unattended with risk. Every hour, or every two hours, the throat should be painted with a brush steeped in crude petroleum. It is well to give the brush a little shake before using it, in order that there may be no excess of liquid to trickle into the respiratory passages. The applications cause no pain, even when the mucous surface is raw and bleeding, and they are immediately followed by separation of the membranes, which seem to be dissolved by the petroleum. A fortnight after the general adoption of this method the epidemic ceased.—*British Medical Journal*, April 22nd, 1893.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P. Ed., Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; late Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

A Remarkable Case of Keloid.—It has long been well known that the negro race is peculiarly liable to the various forms of connective tissue new growth, but the instance recorded by Dr R. W. Taylor is perhaps the most exaggerated one yet published. He says that he has been told by surgeons who have much to do with operations upon negroes, that in general they have a fear, even when the wound is made small, that it will be followed by a keloid growth. The person affected is a rather light-complexioned coloured woman, 23 years old. When about 10 years old she suffered many hardships, and was the drudge of the family, who lived in Virginia. She was required to go into the woods for fuel, and, having no clothes above the waist to protect her, was frequently stung and torn in linear stripes by the briers and bushes through which she had tediously and guardedly to make her way. In the excoriations and bruises thus produced undoubtedly originated the irritative process which has resulted in such marked fibro-cellular new growth, which nearly encircles the patient's waist. There is a fist-sized lobulated tumour attached to the lobule of the right ear. It is dark brown, mottled with very black spots and patches. It is firm and elastic, and is fourth of its series, which are said to have been of uniform size, new ones always being reproduced in place of the one cut away. There are also pedunculated, lobulated, and disc-like tumours on the anterior aspect of the hypogastric and lateral regions of the trunk, resembling large masses of beef kidneys. During the growth of these tumours pain was not complained of till they had reached such a size that they had become burdensome, and then it was of a dull, aching character. Two excellent coloured illustrations give an admirable picture of this unique case. —*New York Medical Journal*, Jan. 7th, 1893.

ON KELOID. — Mr Hutchinson has contributed an excellent chapter on keloid, which, though not yet complete, bears somewhat on the subject of the case just related. He defines it as an auto-infective fibroid hypertrophy of scar tissue. This is very persistent; yet not restricting itself to the scar in which it originated, may grow into the adjacent skin. That it possesses infective properties is further proved by its occasionally producing new growths at distant parts. Keloid growths, too, exist under a law of limited duration; they all tend sooner or later to soften and disappear. The cases which begin in small and scarcely recognised scars, although usually attended by very slow growth, show remarkable persistence. Keloid growths, although infective in continuity, show little or no power of reproducing themselves in distant parts, unless scar tissue be there present. It is probable that in all cases of keloid infective germinal matter is shed into the blood, but that it cannot in healthy skin find a suitable home for development, but forming in a new scar it may infect previously existing ones. Though keloid is possibly a near ally of sarcoma, and though some of its modes of growth resemble those of a malignant disease, yet it never takes on malignant action, never ulcerates or fungates. When it forms and develops rapidly after the injury or in the young, or when very extensive, it is hopeful as regards speedy involution. Keloid is rare in the scar of cured lupus. He has always met with it after unusually complete cure, and more frequently after scraping than after other methods of treatment. He cites a case in which keloid manifested itself in three generations.—*Archives of Surgery*, Jan. 1893.

LOCALIZED ŒDEMA.—Attention from various sides has been directed to this curious and not very rare phenomenon. A critical study of all its most salient features has been made by Dr Collins,[1] who quotes Osler's case, in which the complaint occurred in five generations, affecting more or less severely twenty individuals. Still more extraordinary is the case described by Dr Milroy,[1] in which it was traced through six generations, attacking twenty-two out of ninety-seven persons. He is not, however, quite disposed to include it in the class of angeio-neurotic œdemas properly so-called, since it implicated the lower limbs exclusively, though distinct from elephantiasis. The influence of cold in exciting attacks is noted. Collins accepts the view that angeio-neurotic œdema is closely related to, if not identical with, urticaria tuberosa or giant urticaria. The association of the condition with purpura in some cases, and with gastro-intestinal troubles, is insisted on by Collins and by Dr Bowen.[2] As to prognosis, Collins is inclined to believe that in one half of the cases the complaint disappears after lasting a variable time of from two to three years; in the other half it may remain dormant for prolonged and indefinite periods. A short but comprehensive summary of the chief points in connexion with localized œdemas has been prepared by Dr Jacob.[3] He divides the forms into—1, Those akin to and associated with urticaria; 2, rheumatic; 3, associated with neuralgia; 4, of the angeio-neurotic type.

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[1] *American Journal of the Medical Sciences*, Dec. 1892.

HINTS ON THE ADMINISTRATION OF ANTIMONY.—Some excellent suggestions as to the best mode of giving antimony, and the disorders in which it is most serviceable, have been formulated by Mr Hutchinson. He says that a sixteenth of a grain given three times a day will rarely occasion nausea, and may be continued for many months with the usual effect of improving the appetite and health. These doses often appear to much diminish irritability and congestion of the skin and mucous membranes. It is especially adapted for those in whom there is a defect of secretion. Thus chronic eczema or seborrhœa are frequently much benefited by it. It abates irritability in pruriginous affections, and in some cases of lichen planus it seems to exert an almost specific influence. Opium tends to lessen its depressant effects, and when antimony is ordered for aged persons, particularly if weak, may be usefully combined with it. Antimony forms an insoluble compound with astringents and with alkalies and their carbonates; it should therefore not be given after meals, since it may be neutralized by various articles of food. Bark, rhubarb, tannic and gallic acids must not be combined with antimony. Tartarized antimony is the best form, dissolved in boiling water, and with no addition save a little mucilage to suspend it.—*Archives of Surgery*, Jan. 1893.

THE PIGMENTARY SYPHILIDE.—Dr R. W. Taylor holds that this is one of the manifestations of syphilis which, though at first clearly and sharply defined, has in course of time been rendered so obscure that to-day very few have clear and precise ideas as to its course and nature. According to him the primordial pigmentary anomalies due to syphilis consist essentially in a super-pigmentation, which may in whole or in part be replaced by a corresponding loss of colour or leucodermatous condition. This primordial hyperpigmentation is the essential pigmentary syphilide; all other discolorations are secondary processes, and in no manner entitled to be classed as pigmentary syphilides. It exists in three well-marked and quite distinct conditions:—1. In the form of spots or patches of various sizes. It is not a posthumous expression of an antecedent eruption, such as the pigmentary spots which follow a papular syphilide. They may remain unchanged and indolent for months, particularly in cold weather. In course of time they show evidence of fading, and slowly disappear. 2. As a diffuse pigmentation of greater or less intensity, which sooner or later becomes the seat of leucodermatous changes in the shape of small spots which gradually increase in size. This is the retiform pigmentary syphilide, *the syphilide pigmentaire à dentelles* of Fournier. The most common site of this eruption is on the sides or back of the neck. The patients usually say that they had noticed, or were told, that their necks were getting or had got dirty. In time whitish spots form on the pigmented part, and the case is apt to be mistaken for one of leucoderma. In process of time, months or a year or more, the skin resumes its normal appearance. 3. In an abnormal distribution of the pigment of the skin, in which, owing to the lack or crowding out of the pigment in places, they become whiter, while the parts involved in the abnormal distribution become darker; in this way a dappled appearance is presented. It has been termed the marmoraceous, from its resemblance to some forms of marble in which there is an intimate interblending of light and darker colours. It is not a common form, and is peculiarly liable, by reason of its delicacy of tone and tint, to pass unobserved. There is a displacement of pigment; it seems to occur always on the sides of the neck, and does not tend to extend from thence. Some well-executed illustrations accompany Dr Taylor's paper.—*New York Medical Journal*, February 18th, 1893.

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[1] *Journal of Cutaneous and Genito-Urinary Diseases*, Nov. 1892.
[2] *New York Medical Journal*, Nov. 5th, 1892.
[3] *British Journal of Dermatology*, May 1892.

MYCOSIS FUNGOIDES; THE PRE-MYCOSIS STAGE LASTING THIRTY YEARS.—M. Besnier has related the case of a clergyman whom he had treated unsuccessfully for ten years for a chronic urticaria, and it was only at the end of that time that the patches of urticaria had altered their aspect and had become interspersed with the tumours of mycosis. Dr Dubreuilh of Bordeaux has recorded an instance in which the information furnished by the patient herself and by her family has rendered it certain that the pre-mycosic period had lasted thirty years, characterized solely by eczematous areas. She was 82 years of age, and since she was 50 had suffered from itching on different parts of her body. Latterly, at least, the pruritus was accompanied by an eruption of red patches more or less crusted. Relief was obtained by the use of sulphur baths. All the surface with the exception of the head and hands, is the seat of an eruption made up of—1. Large brown macules, the remains of previous lesions (eczematous patches or tumours). 2. Reddish patches, crusted or scaly, resembling eczema. 3. Tumours, reddish or brownish in colour, seated more or less deeply in the true skin, tolerably firm, varying from a small nut to an egg in size. 4. Ulcerated tumours, only moderately painful. The itching is very severe, affects the eczematous areas and the tumours, occurs irregularly in paroxysms, and prevents sleep. The application of borated vaseline gave a little relief, and caused some of the ulcers to heal. He points out that the persistence of an itchy eruption, unmitigated by treatment, might suggest mycosis fungoides.—*Annales de la Policlinique de Bordeaux*, Mars 1893.

Part Fifth.

MEDICAL NEWS.

Royal Colleges of Physicians and Surgeons of Edinburgh, and Faculty of Physicians and Surgeons of Glasgow.—The Quarterly Examinations in Edinburgh took place in April, with the following results:—*First Examination.*—Of 35 Candidates, the following 24 passed:—Walter Squibbs, Somersetshire (with honours); Mary Harriet Simson, Edinburgh; David Anthony Birrell, Chepstow; Ralph Mortimer Johnson, Barbados; Samuel John Brookfield Fox, Sheffield; James Hamilton Fleming, Strathaven; Gilbert Hetherington, Appleby; Talaat Mansour, Cairo; James Jeffares, Wexford; John William Harrison, Bridlington Quay; Frederick Augustus Routch, Buenos Ayres; Harry Bennet Palmer, Bedford; George Gillon Irving, Calcutta; William Joseph Collins, Clonmel; Charles Owen Wynne, North Wales; Isabella Aitken, Berwickshire; Edward Regan, County Derry; James Clement Purcell Reardon, India; John Michael Murphy, Kerry; Ernest Fletcher de Jong, Manchester; Leonard Ruscoe Steele, Australia; Joseph Leonard Pinchin, Melbourne; Geoffrey Fitz Thomas, Norfolk; and John Wilson Shiels, San Francisco. Of 7 Candidates who entered for the respective divisions, 6 passed. *Under Five Years' Course.*—The following Candidates passed the entire Examination:—Mildred Jane Wallace, United States (with honours); John Rutherford Morris, Aberdeen; Christina Allison Mayne, Inverness; Edgar Huss Sheldon, Leicester; Ebenezer Crombie Macintosh, Burntisland; Robina M'Gregor, Monifieth; Edward Baines Kitching, Dundee; Celeste Ferris, Londonderry; Mary Bowman Wilson, Ochiltree; Ethel Louie Starmer, Matlock (with honours); Eliza M'Farlane, Dunfermline; Walter Hulbert Cox, Ceylon; Georgina Catherine Hogg, Edinburgh; and John Cranke, Ulverston. Of 5 Candidates who entered for the respective divisions, 4 passed. *Second Examination.*—Of 51 Candidates, the following 24 passed:—Ibrahim Abd-el-Saied, Cairo; John Arthur Kilvington, Whitby; Herbert George Parker, Grimsby; James Boyd, Glasgow; Clyde Harold Van Straubenzee, London; Arthur Alison Bradburne, Liverpool; David Anthony Birrell, Monmouthshire; Reginald Frederick Yencken, Melbourne; John Connel Ramsay, Peebles; Henry Bateson, Bolton; John James Edgar, Northamptonshire; Thomas M'Cormac Adair, Ballygraffir; Percy Denton-Fethers, Victoria; William James Sturges Davis, London; Charles Benjamin Rossiter, Liverpool; John Meade, County Limerick; Charles Edward Page, Edinburgh; Alfred Speight, Lancashire; Christopher Turner, County Cork; George William Baker, Kettering; Arthur Pearson, Whitby; Charles Ernest Conran, Madras; Albert Robinson Wilkinson, Lancashire; and George Keble Moberly, Bonn, Germany. Of 17 Candidates who entered for the respective divisions, 10 passed. *Final Examination.*—Of 87 Candidates, the following 40 passed, and were admitted L.R.C.P. & S.E., and L.F.P. & S.G.:—James Martin, Lanarkshire; William Haughton Heard, County Wicklow; Charles Henry Hibbert, Marple Bridge; Richard Lee Bolton, Leith; David Robert Taylor, Edinburgh; Stuart Charles Bloxham, Worcestershire; Arthur William Hall, Lincolnshire; David Anthony Birrell, Monmouthshire; James Francis Clark Hossack, London; Charles Alexander Lauchlan, Bombay; Frederick Lionel Burdon, Canada; William Elmes Mathew, Cornwall; Frederick John Turnbull, Edinburgh; John Charles Lynd, Limavady; Charles Felix Nugara, Ceylon; Edward Walter Longden, India; William Benson, Lancashire; James Dugald Maclean, Edinburgh; Jeremiah Patrick Conway, Cork; Walter Edward Evans, Limerick; William Redmond Lemon, Armagh; John Elder Butchart, Melbourne; David Griffiths Newland, Nellore; David Clement Lionel Williams, Brecon; Robert Richard Hughes, Carnarvon; Dagmar Berne, New South Wales; Alexander William Forrester, Belfast; Robert Harrison Bland, Penrith; Walter Llewellyn Hawthorne, County Down; Alfred Arthur Hill, Norwich; Francis Hall-Wright Warwickshire; Richard Henry Darwent, Barnard Castle; William Shaw, Halifax; John Flynn Queensland; George Robert Cullin, Dublin; George Morton Wilcockson, Chesterfield; Philip James Friedburg Kavanagh, Kent; Thomas Llewellyn Davies, Carmarthenshire; Charles Edward Lister, Liverpool; and Robert William Foster Welch, Southampton. Of 20 Candidates who entered for the respective divisions, 12 passed.

MEDICO-CHIRURGICAL SOCIETY, GLASGOW. — At the Annual General Meeting of the Society the following gentlemen were elected Office-bearers for Session 1893-94: — Dr Hector C. Cameron, *President*. *Section of Medicine.*—Dr Middleton, *Vice-President;* Dr Auld and Dr W. A. M'Lachlan, *Councillors;* Dr C. O. Hawthorne, *Secretary*. *Section of Surgery.*—Dr W. J. Fleming, *Vice-President;* Dr Dalziel and Dr MacPhail, *Councillors;* Dr John Barlow, *Secretary*. *Section of Pathology.*—Dr Charles Workman, *Vice-President;* Dr John Brown and Dr T. K. Monro, *Councillors;* Dr R. M. Buchanan, *Secretary*. *Section of Obstetrics.*—Dr M. Cameron, *Vice-President;* Dr Lapraik and Dr Jardine, *Councillors;* Dr Lawrence Oliphant, *Secretary*. Mr Henry E. Clark, *Treasurer;* Dr Walker Downie, *General Secretary*.

DR R. M'KENZIE JOHNSTON has been appointed Aurist to the Edinburgh Deaf and Dumb Institution.

WE have been favoured by copies of *The Rock* for February 10th, 17th, and 24th, 1893. It seems that the editor of this religious weekly wrote a leader on vivisection, which gave rise to a very lengthy correspondence,—Mr Lawson Tait on the one hand, Professor Victor Horsley and Dr Ruffer on the other, writing at considerable length. The editor remarks: "We regret that we have derived from the correspondence so far no real assistance towards arriving at a judgment upon a question of very high moment." We do not wonder that he thus writes, for a more pitiable exhibition of bad taste we have not seen for a long time, and it seems to us that it is inexcusable for medical men to carry on such a correspondence in a lay paper. The writers might perhaps be justified in writing with the view of instructing the public upon a vexed question of such great importance; but to introduce personalities, as has been done in the letters before us, lowers the dignity of the medical profession, and can serve no good end whatever. If the gentlemen referred to must fight, let them fight where the points involved in the controversy will be appreciated, and not bring ridicule upon their profession by unseemly disputes unintelligible to the readers of *The Rock*, and only calculated to give the enemy occasion to blaspheme.

CORRESPONDENCE.

(To the Editor of the Edinburgh Medical Journal.)

"ECLAMPSIA GRAVIDARUM."

SIR,—In the *Edinburgh Medical Journal* for April I read with much pleasure and deep interest a communication read before the Obstetrical Society, by Dr Alex. R. Simpson, on the "Induction of

Labour by means of Intra-uterine Injections of Glycerine in a Case of Eclampsia Gravidarum." Although I have not known of it being used before in a case of eclampsia, I know that it is frequently used to procure abortion, not only by medical men, but by those unwilling to become mothers. In cases of eclampsia it has always appeared to me that the sooner labour is completed the better for the patient. In the case mentioned by Dr Simpson the os was only dilated to the extent of a shilling in one hour and three-quarters, and not fully dilated till ten and a half hours after first injection. This is a long time to wait, if the object of inducing labour was to arrest the convulsions. In my experience I have found that digital dilatation could accomplish our aim generally within two hours. If the cause of the convulsions is uræmia, epilepsy, or apoplexy, the more rapidly delivery takes place the more hope of a recovery.

In a paper I wrote in a recent number of the *Medical News* of Philadelphia, I advanced the theory that there are at least five varieties of eclampsia, viz.,—(1), Hysteric; (2), Epileptic; (3), Uræmic; (4), Apoplectic; (5), Microbic. The first four are well known, but I have not seen any account of the fifth. In the microbic there are none of the signs or symptoms seen in the other four varieties. There are no premonitory symptoms, no warning given. The patient feels "well" up to the moment she is seized with an attack. The kidneys are not at fault. The temperature varies little, and the pulse neither quickens nor becomes slower for any length of time. On the 25th of March of last year it was reported that two French physicians had discovered the microbe of puerperal eclampsia. This tended to confirm my theory that there was a microbic form. In the case I had I tried all the usual remedies. The convulsions came on before delivery, and continued after it till death took place, two days from the time of first seizure. In many ways this case was like that reported by Dr Simpson. There was no albumen up to one hour before death. Such was the case in Dr Simpson's patient. I had no opportunity of making an autopsy, so could not know if the organs were all healthy, but as far as could be ascertained during her life the lady was healthy. My experience in this form of eclampsia is, that until we know how to destroy the microbe without destroying the patient, none of our present modes of treating microbic convulsions can be of any service. The question may arise—Is there a microbe present in all pregnant women, which some are able to throw off, but others are not, but, on the contrary, permit them to increase so that they destroy life?

J. LINDSAY PORTEOUS, M.D., F.R.C.S. Ed.

YONKERS, NEW YORK,
April 13, 1893.

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